ORDER NO. AD9409247C2

# Service Manual

COMPACT disc DIGITAL AUDIO

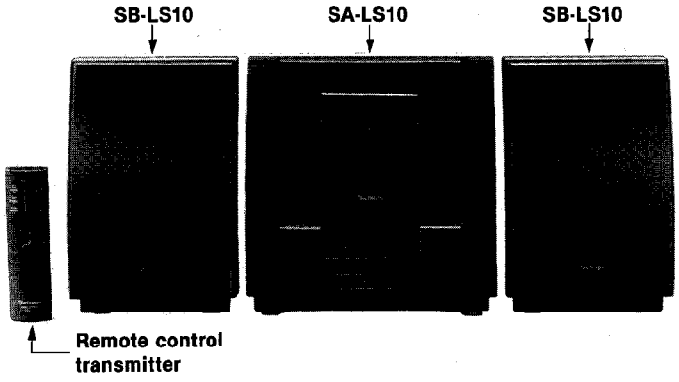
DIGITAL

MASH* multi-stage noise shaping

DOLBY SYSTEM*

CD Stereo System

# SA-LS10




**Colour**

(K) ... Black Type

**Area**

| Suffix for Model No. | Area | Colour |
|---|---|---|
| (EB) | Great Britain. | (K) |
| (EG) | Europe. | |
| (EI) | Italy. | |

**System: SC-LS10**

※ • MASH is a trademark of NTT.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

**TAPE DECK: AR-1 MECHANISM SERIES**
**TRAVERSE DECK: RAE0135Z MECHANISM SERIES**

| System | Cassette CD receiver | Speakers |
|---|---|---|
| SC-LS10 | SA-LS10 | SB-LS10 |


SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ
SELF-DIAGNOSTIC FUNCTION\ФУНКЦИЯ САМОДИАГНОСТИКИ
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RESISTORS AND CAPACITORS\РЕЗИСТОРЫ И КОНДЕНСАТОРЫ
PACKAGING\УПАКОВКА



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Technics

# SPECIFICATIONS (DIN 45 500)

## ■ AMPLIFIER SECTION

**40 Hz–16 kHz continuous output both channels driven**
2×15 W (THD 1%, 4Ω)
**1 kHz continuous power output both channels driven**
2×20 W (THD 1%, 4Ω)
**Total harmonic distortion half power at 1 kHz** 0.09% (4Ω)
**Input sensitivity**
**AUX** 250 mV
**Input impedance**
**AUX** 22 kΩ

## ■ FM TUNER SECTION

**Frequency range** 87.50–108.00 MHz
**Sensitivity** 1.8 µV (IHF '58)
**S/N 26 dB** 1.5 µV
**S/N**
**MONO** 70 dB (75 dB, IHF)
**Image rejection at 98 MHz** 80 dB
**Alternate channel selectivity** ±400 kHz, 65 dB
**Stereo separation**
**1 kHz** 35 dB
**Antenna terminal(s)** 75Ω (unbalanced)

## ■ CD SECTION

**Sampling frequency** 44.1 kHz
**Decoding** 16-bit linear
**Beam source** Semiconductor laser
**Wave length** 780 nm
**Number of channels** Stereo
**S/N** 85 dB
**Wow and flutter** Below measurable limit
**Digital filter** 8 fs
**D/A converter** MASH (1 BIT DAC)

## ■ AM TUNER SECTION

**Frequency range**
**MW** 522–1611 kHz (9 kHz steps)
530–1620 kHz (10 kHz steps)
**LW** 144–288 kHz (9 kHz steps)
**Sensitivity (S/N 20 dB)**
**MW (at 999 kHz, 1000 kHz)** 500 µV/m
**LW (at 216 kHz)** 50 µV

## ■ CASSETTE DECK SECTION

**Track system** 4-track, 2-channel
**Heads**
**Record/playback** Permalloy head
**Erasure** Double gap ferrite head
**Motor** DC servo motor
**Recording system** AC bias, 100 kHz
**Erase system** AC erase
**Tape speed** 4.8 cm/s (1-7/8 ips)
**Frequency response**
**Normal** 40 Hz–14 kHz
**$CrO_2$** 40 Hz–14 kHz
**Metal** 40 Hz–15 kHz
**S/N($CrO_2$ type tape)**
**Dolby NR off** 52 dB (A-WTD)
**Dolby NR on** 61 dB (CCIR)
**Wow and flutter** 0.1% (WRMS)
**Fast forward and rewind time**
Approx. 45 seconds with C-60 cassette tape

## ■ GENERAL

**Power consumption** 77 W
5 W (with standby mode)
**Power supply**
**[For (EG, EI) areas.]** AC 50/60 Hz, 230 V
**[For (EB) area.]** AC 50/60 Hz, 230/240 V
**Dimensions (W×H×D)** 300×314×197 mm
($11^{13}/_{16}$" × $12^{3}/_{8}$" × $7^{3}/_{4}$")
**Weight** 5.5 kg (12.1 lb.)

**Notes:**

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

# ■ SELF-DIAGNOSTIC FUNCTION

## • SELF-DIAGNOSTIC DISPLAY

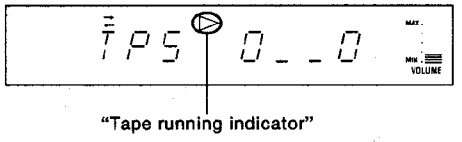
This unit has a self-diagnostic function to indicate malfunctions. You should take full advantage of this function when performing maintenance.

| Procedure | Display location |
|---|---|

**To display self-diagnosis results:**

**• For error codes H01, H02, H03, F01 and F02**

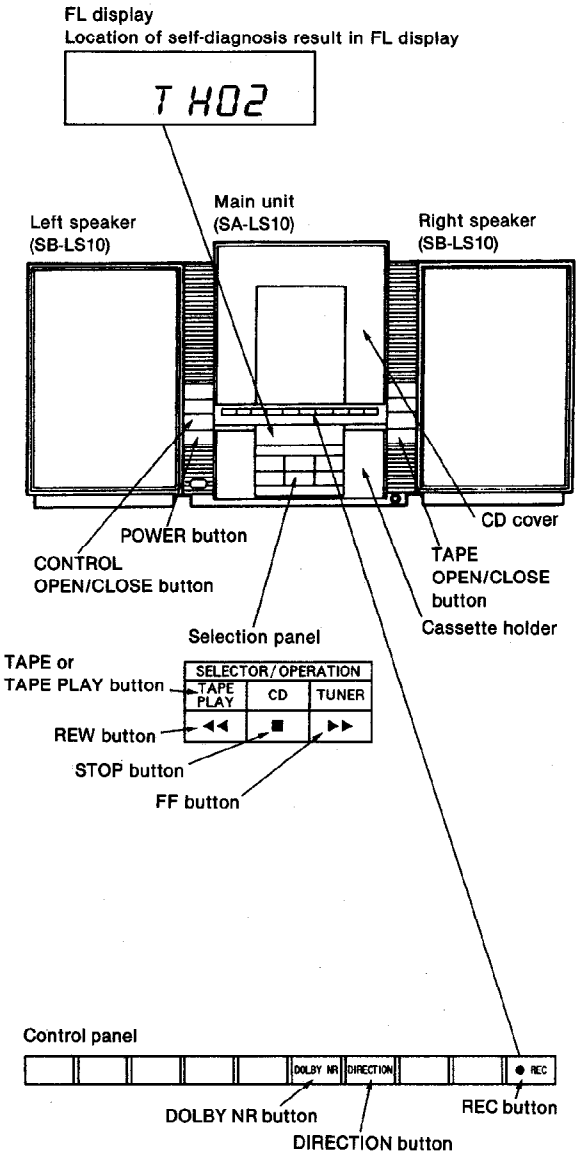
1. Press the CONTROL OPEN/CLOSE button to open the control panel. The CD cover will lift slightly.
2. Press the TAPE button on the selection panel until TAPE PLAY is indicated.
3. Load a cassette in the tape deck. Metal, chrome or normal tape may be used.
4. Press the DIRECTION button on the control panel to activate the "tape running" indicator in the FL display, as shown below. Remove the cassette.




5. With no cassette in the deck, press the DOLBY NR button for at least 2 seconds, then hold it down as you press the STOP button for at least 2 more seconds.
6. "T" will appear in the FL display, indicating that the unit has entered self-diagnosis mode.
7. Load a metal tape with the protective tab on the left side of the cassette (as you look at it) broken off. Then close the cassette holder. (Use the tape which is rewinded for about 10 seconds.)
8. Press the FF button to fast forward the cassette for about 2 seconds until it stops automatically. Remove the cassette.
9. Load a metal tape with the protective tab on the right side of the cassette (as you look at it) broken off. Close the cassette holder.
10. Press the REW button to rewind the cassette for about 2 seconds until it stops automatically. Remove the cassette.
11. Load a chrome music tape with the protective tabs unbroken and close the cassette holder.
12. Press the TAPE PLAY button to start the TPS* (tape program search) function and stop it automatically. Remove the cassette.
13. Load a normal tape with the protective tabs unbroken and close the cassette holder.
14. Press the REC button.
15. Press the STOP button to indicate any fault that has occurred. If more than one fault has occurred, each will be shown in turn by successive presses of the STOP button. If there were no faults, "T" remains in the FL display.

**• For error codes F03 and F61**

Any fault is automatically indicated in the FL display. (Three seconds later, the power is turned off automatically, and only a time clock is displayed.)



**Procedure**

**To resume normal display:**

1. **For error codes H01, H02, H03, F01, F02 and F03**
   - Press the POWER button once to turn off the power and once more to turn it on again.
2. **For error code F61**
   - The power will remain off until the fault is fixed.

**To display self-diagnosis results again:**

1. **For error codes H01, H02, H03, F01, F02 and F03**
   - Repeat step 1, 2 and 5 in the original procedure.
2. **For error code F61**
   - When the power is turned on, "F61" is displayed for 3 seconds. Then the power is turned off automatically, and only a time clock is displayed.

**Note:**

- Fault indications are stored in memory, and must be cleared from it when the fault has been fixed. To do this, keep the STOP button pressed for at least 5 seconds while the self-diagnosis result is displayed. "CLEAR" will appear in the FL display for 1 second and the "T" replace it.
- Then turn off the power.

## Interpretation of error codes

| Error code | Symptom/status | Remedy |
|---|---|---|
| H01 | The cassette mechanism has a malfunction. For example, pressing the FWD PLAY button results in reverse playing. | The cassette mechanism mode switch (S971) and plunger are defective. Check and/or replace them. |
| H02 | The machine will not record, or records even on a tape whose protective tab has been broken off. | The erasure prevention switches (S974 and S975) are not making contact or are short circuited. Check and/or replace them. |
| H03 | Pressing the TAPE PLAY button fails to play the tape. Pressing the TAPE PLAY button causes the motor to rotate even when no cassette is loaded. | The cassette half-open detection switch (S972) is not making contact or is short circuited. Check and/or replace it. |
| F01 | When the TAPE PLAY button is pressed, the tape runs for a short time and then stops. | The hole detection IC (IC971) is defective, causing a faulty reel pulse. Check and/or replace the IC. |
| F02 | The TPS* (tape program search) function does not work. | The PLAY EQ/recording amp IC (IC201) is defective. Check and/or replace it. |
| F03 | Pressing the REC button makes the TAPE PLAY, FF and REW buttons inoperative. | The reel motor is defective. Check and/or replace it. |
| F61 | The power is turned off automatically soon after the POWER button is set to ON. ("F61" is indicated for 3 seconds and then the display changes to a time clock.) The speaker output IC is defective, causing a DC voltage to develop at the speaker terminal. | The speaker output IC (IC501) is defective. Check and/or replace it. |

## *TPS

The TPS (tape program search) function detects breaks in the recorded sound between tracks on a tape. This function should not be used with the following sorts of music tape.

- Tapes in which the intervals between tracks are less than 4 seconds.
- Tapes with no periods of complete selince (e.g. those recorded using a microphone).
- Tapes featuring unusually low volumes of sound in parts (e.g. some classical music).
- Tapes with tracks that last less than 10 seconds.
- Tapes in which music fades in or out.

## ■ SOUNDSCAPE

This unit has a "Soundscape" function that produces three natural sound effects: a murmuring stream, waves on a beach and birds in a forest.

### • SOUNDSCAPE OUTLINE

Pressing the SOUNDSCAPE button on the main unit lets you select a natural sound effect (stream, beach or forest). The sound effects change according to the time of day: morning (6 : 00~11 : 59 hrs), afternoon (12 : 00~17 : 59 hrs) or night (18 : 00~5 : 59 hrs).

Example: In the morning the forest is filled with the calls of cuckoos, while at night the hoots of owls and the chirping of crickets are to be heard.

Note: The natural sound effects change according to the time set on the clock. If a time is not set, they switch automatically to those heard in the afternoon.

### Table 1. Soundscape effects

The table below shows the natural sound effects heard at each time of day.

| Mode | | Basic sound | Additional sound 1 | Additional sound 2 | Additional sound 3 | Additional 4 sound |
|---|---|---|---|---|---|---|
| Stream | Morning | Stream A<br>Stream B<br>Stream C | Coal tit (bird) | Willow tit (bird) | Gray thrush (bird) | Cuckoo |
| | Afternoon | | Coal tit | Willow tit | Gray thrush | Great tit (bird) |
| | Night | | "Bell-like" cricket | Owl | Cricket | |
| Beach | Morning | Large wave<br>Medium-size wave<br>Small wave<br>Ebbing wave | Bird 2 | Bird 3 | Bird 4 | Seagull |
| | Afternoon | | Seagull | Bird 5 | Bird 1 | |
| | Night | | | | | |
| Forest | Moning | Olive-backed pipit (bird)<br>Nuthatch (bird)<br>Chiffchaff (bird) | Cuckoo | Coal tit (bird) | Gray thrush | Great tit |
| | Afternoon | | Bush warbler (bird) | Coal tit | Brown-necked bulbul (bird) | Gray thrush |
| | Night | | "Bell-like" cricket | Owl | Nightjar (bird) | Cricket |

Birds 1~5 are other species of birds.

**Table 1**

### Natural sound effect configuration (see Table 1)

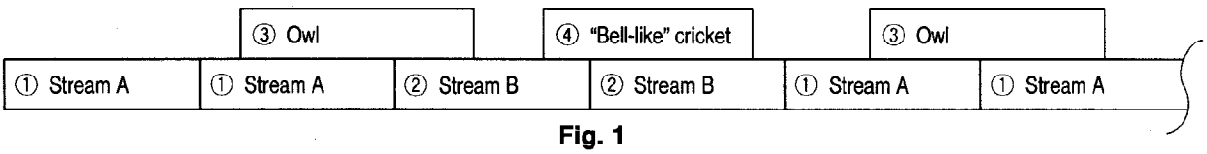



**Fig. 1**

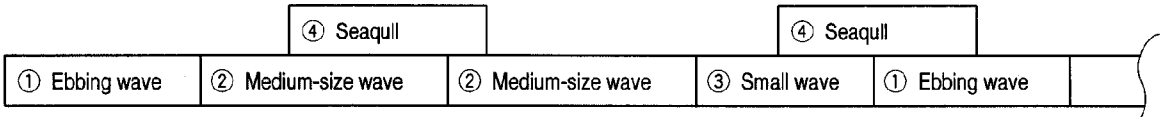
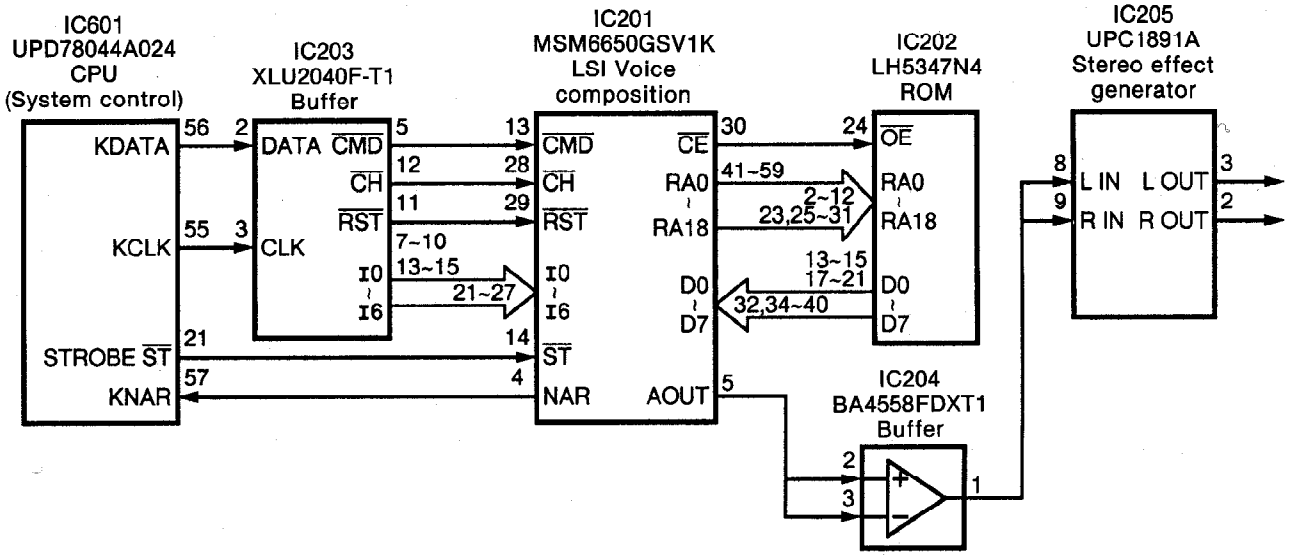



**Fig. 2**

1. Figure 1 gives one example of a stream at night. (1), (2), (3) and (4) represent three sounds blended into one effect. (1) and (2) are basic sounds, and (3) and (4) are additional sounds. Against the background of streams A and B, the hoots of owls and chirps of crickets recreate the authentic sound of a stream at night.
2. Figure 2 gives one example of a beach in the morning. (1), (2) and (3) are basic sounds and (4) is an additional sound. Against the background of small and medium-size waves, the calls of seagulls recreate the authentic sound of a beach in the morning.
3. The individual components of each sound effect are combined by means of random numbers, so the pattern is changing all the time.

**• System block diagram**




1. The CPU (IC601) inputs a command signal to the ST terminal (pin 14) of the LSI voice composition (IC201) to initiate sound synthesis. The ST terminal can only receive command signals from the CPU when its KNAR terminal (pin 4) is driven high.
2. Command signals to select one of the Soundscape modes (stream, beach and forest) are sent from the KDATA terminal (pin 56) of the CPU to terminals I0~I6 (pins 21~27) of the LSI voice composition via the buffer (IC203).
3. Output signals controlling reading from the ROM (IC202) go from the CE terminal (pin 30) of the LSI voice composition to the ROM's OE terminal (pin 24). The OE terminal can only instigate a read operation from ROM when it has been driven low.
4. Output signals designating an address containing data to be read go from RA terminals 0~18 (pins 41~59) of the LSI voice composition to RA terminals 0~18 (pins 2~12, 23 and 25~31) of the ROM.
5. Data specifying the components of the selected sound effect are output from terminals D0~D7 (pins 13~15 and 17~21) of the ROM to terminals D0~D7 (pins 32 and 34~40) of the LSI voice composition.
6. The LSI voice composition processes these data and outputs a monaural signal from its Audio OUT terminal (pin 5).
7. The stereo effect generator (IC205) receives the monaural signal through both its L IN and its R IN terminals (pins 8 and 9) and outputs a stereo signal from its L OUT and R OUT terminals (pins 3 and 2).

## ■ OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURES

**NOTE** **1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**

**2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**

**3. Select items from the following Index when checks or replacement are required.**

**4. Illustrated screws are equivalent to actual size.**

**5. Refer the parts No. on the page of "Main component Replacement Procedures", if necessary.**

## • Contents


**•Checking Procedure for each P.C.B.** **page.**

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4.Checking for the FL P.C.B. ..... 41,42.

**•Main Component Replacement Procedures**

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2.Replacement for the loading motor and motor belt ..... 42.

3.Replacement for the timing belt,CD door ass'y,CD cabinet(Upper) and CD cabinet(Lower) ..... 43~45.

4.Replacement for the head block ass'y and pinch arm unit ..... 45,46.

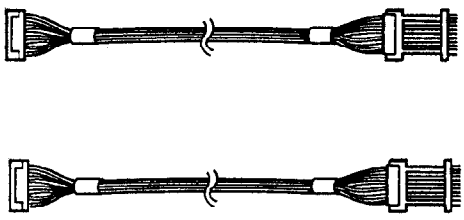
5.Replacement for the belt,reel motor,capstan motor unit ..... 46,47.

6.Replacement for the solenoid and parts on the mechanism P.C.B. ..... 47,48.


## • Preparation

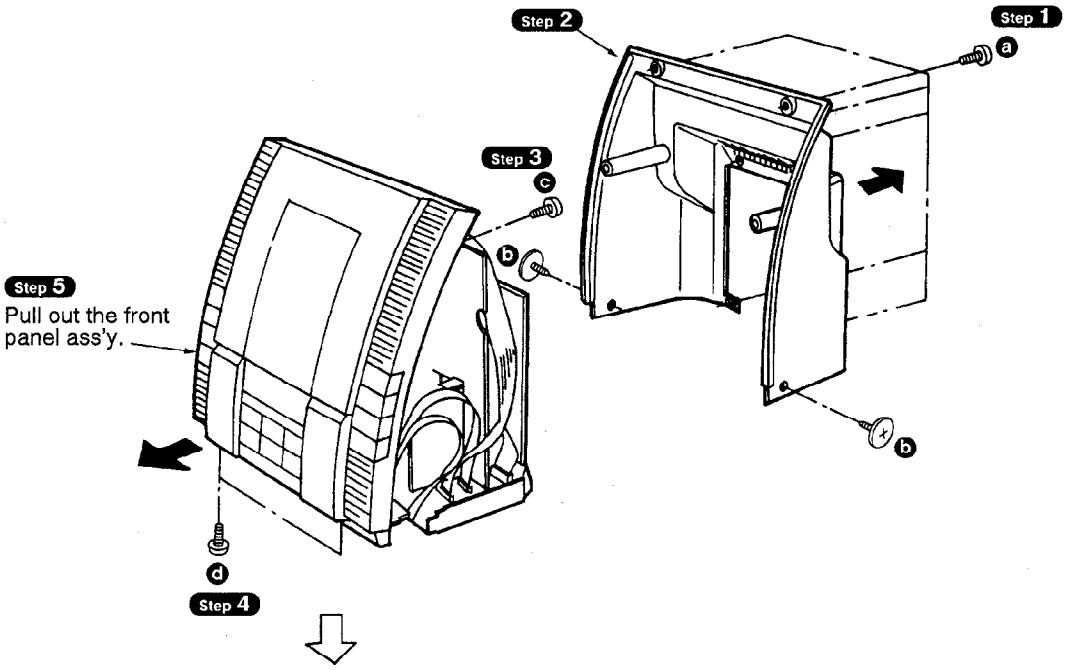
For checking the P.C.B., following extension cable should be prepared.

A pair of extension cable
[RFKZ0048]

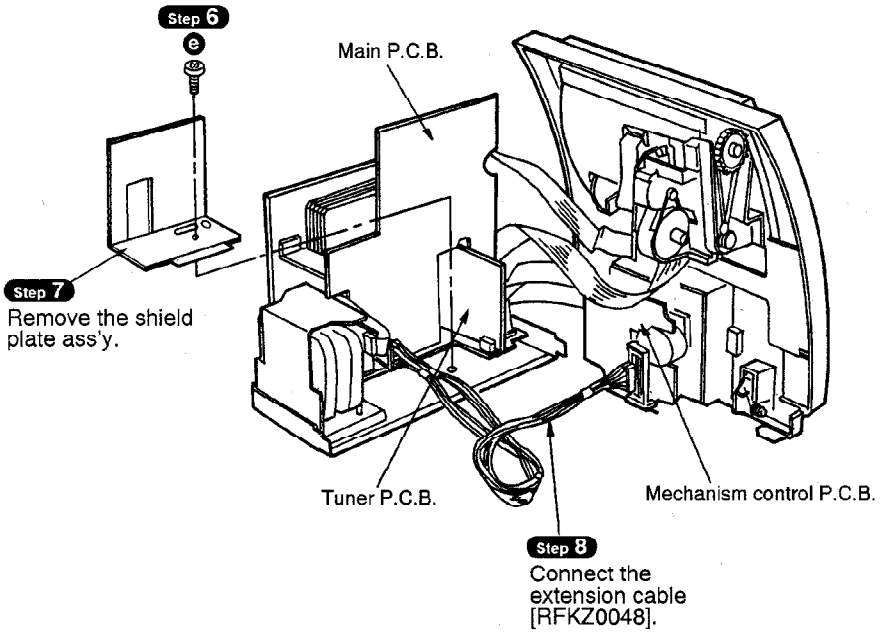


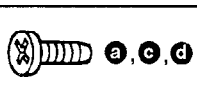
## ■ Checking Procedure for each P.C.B.

### 1. Checking for the main P.C.B.,tuner P.C.B. and mechanism control P.C.B.




•Check the main P.C.B.,tuner P.C.B. and mechanism control P.C.B. and replace the parts as shown below.



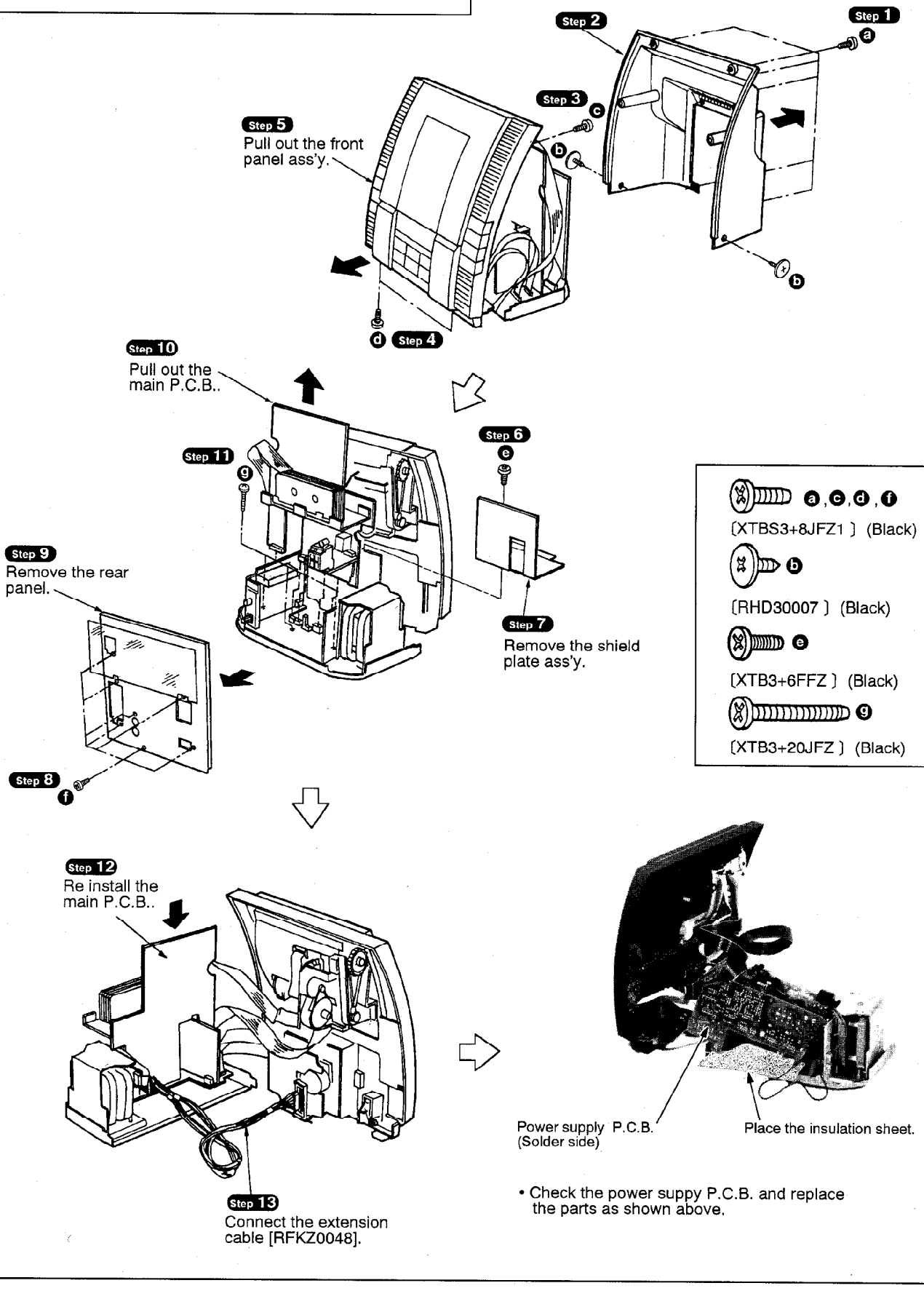




[XTBS3+8JFZ1] (Black)

[RHD30007] (Black)

[XTB3+6FFZ] (Black)

## 2. Checking for the power supply P.C.B.

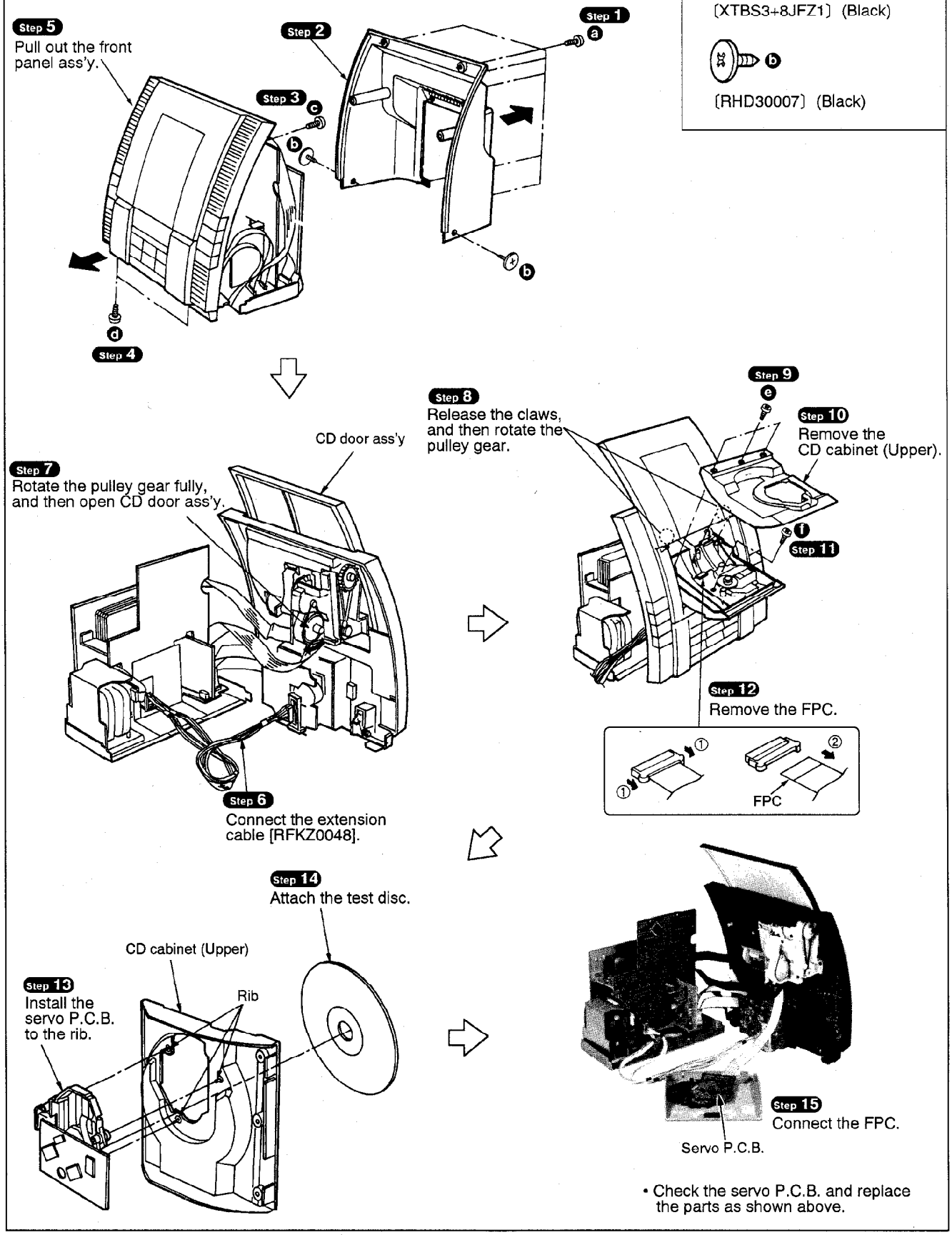



• Check the power suppy P.C.B. and replace the parts as shown above.

## 3. Checking for the servo P.C.B.

a, c, d, e, f
[XTBS3+8JFZ1] (Black)

b
[RHD30007] (Black)



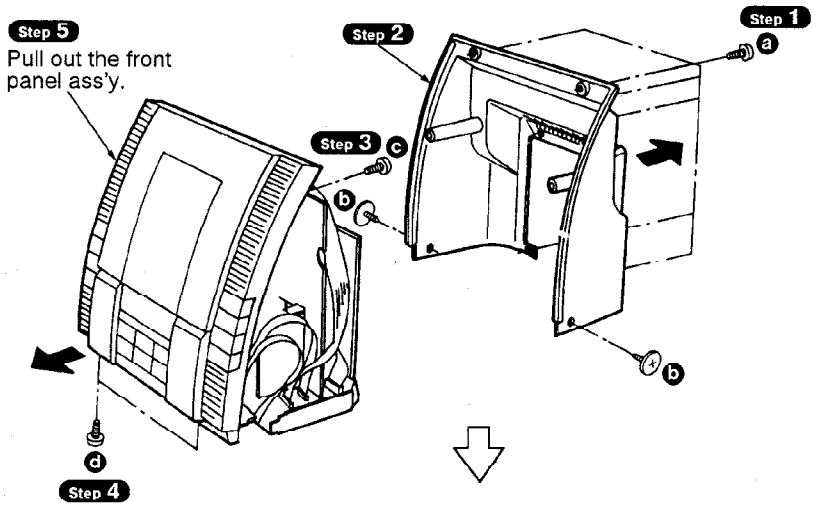

• Check the servo P.C.B. and replace the parts as shown above.

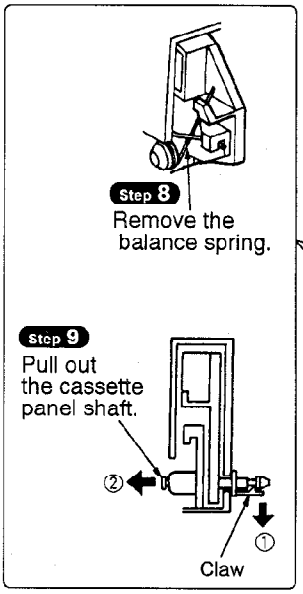
## 4. Checking for the FL P.C.B.

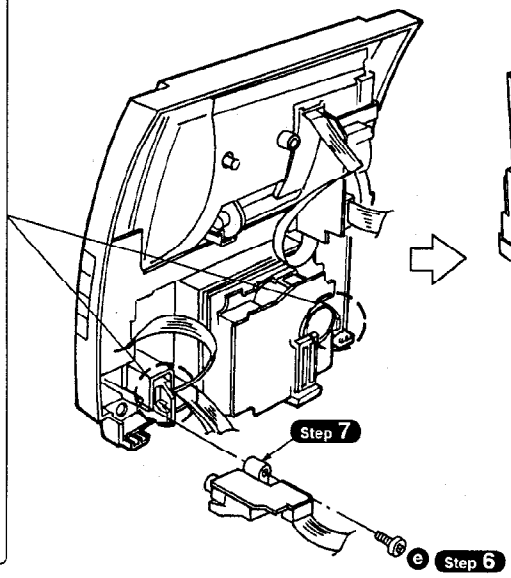
ⓐ, ⓒ, ⓓ
[XTBS3+8JFZ1 ] (Black)

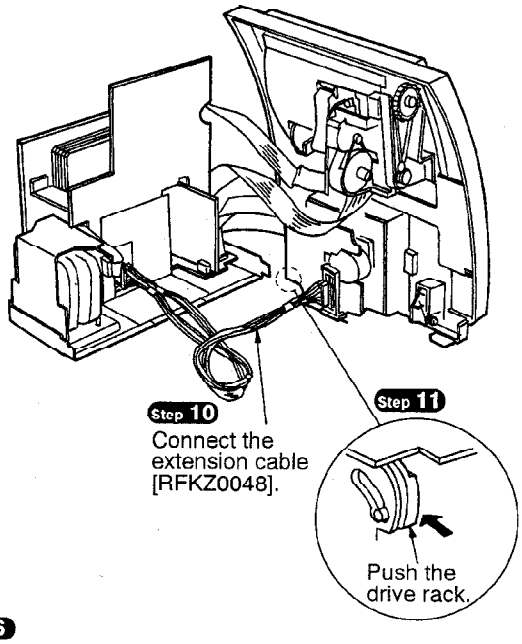
ⓑ
[RHD30007] (Black)

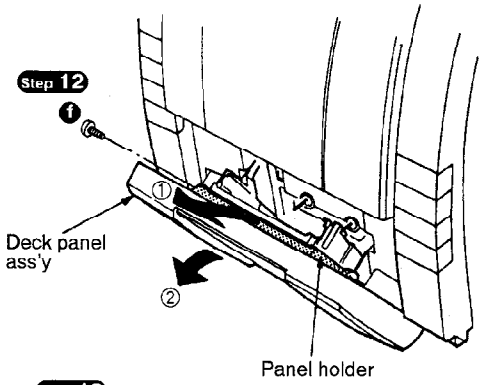
ⓔ, ⓕ, ⓖ
[XTBS26+8J ]



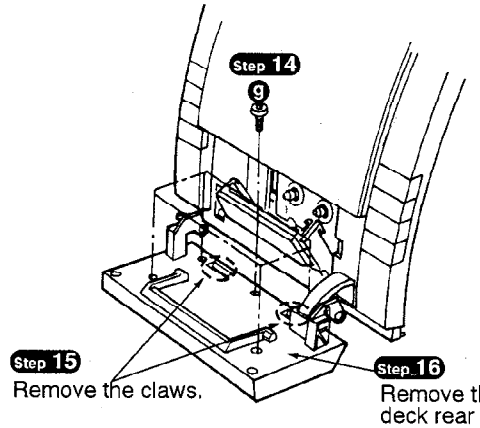



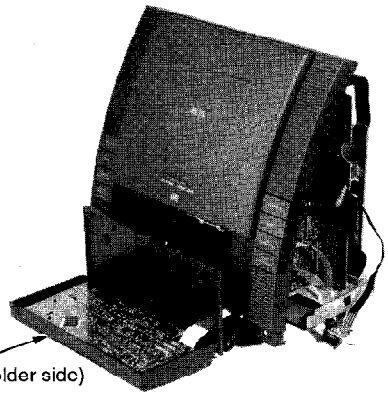




Step 13
Lift the panel holder, and then remove the deck panel ass'y.




To be continued on next page



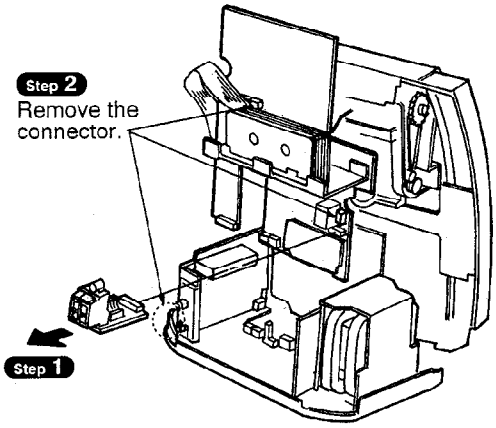
FL P.C.B. (Solder side)

•Check the FL P.C.B and replace the parts as shown below.

## ■ Main Component Replacement Procedures

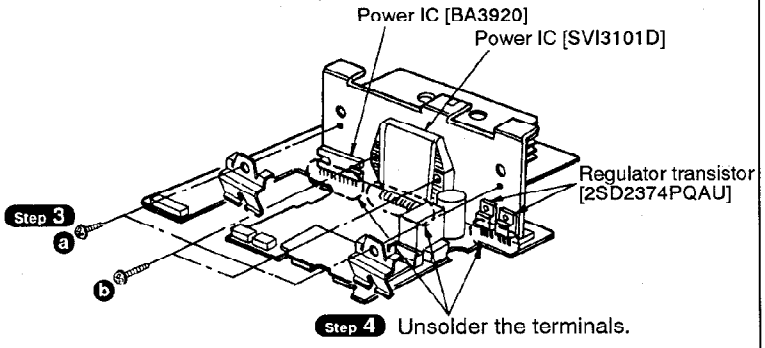
### 1. Replacement for the power IC and regulator transistor

•Follow the item 2( Step 1 ~ Step 9 ) in checking procedures for each P.C.B. on page 39.




**NOTE**

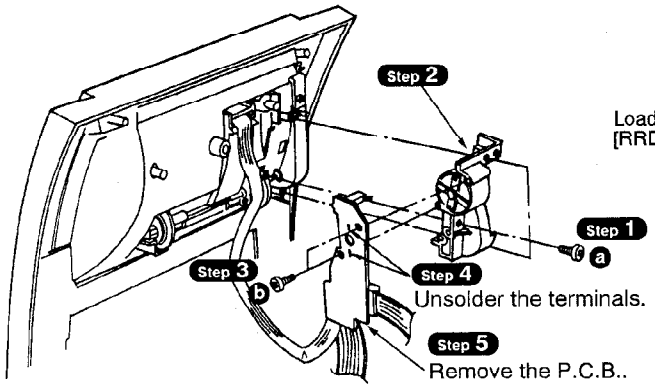
After replacing the power IC or regulator transistar, apply a sufficient quantity of compound grease (RFKX0002) or equivalent ageant between the heat sink and the power IC and regulator transistor.

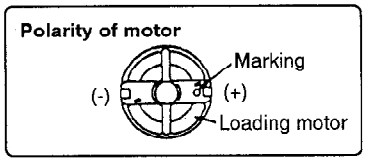


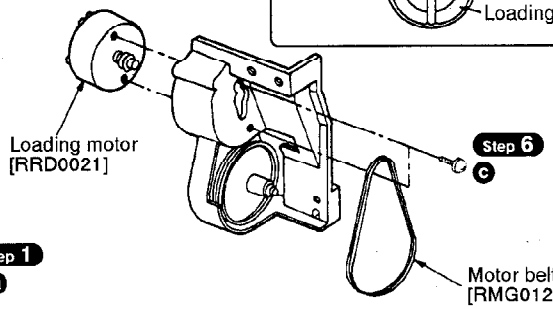
[ XTW3+8T] [ XTW3+15T]

### 2. Replacement for the loading motor and motor belt

•Follow the item 1( Step 1 ~ Step 5 ) in checking procedures for each P.C.B. on page 38.



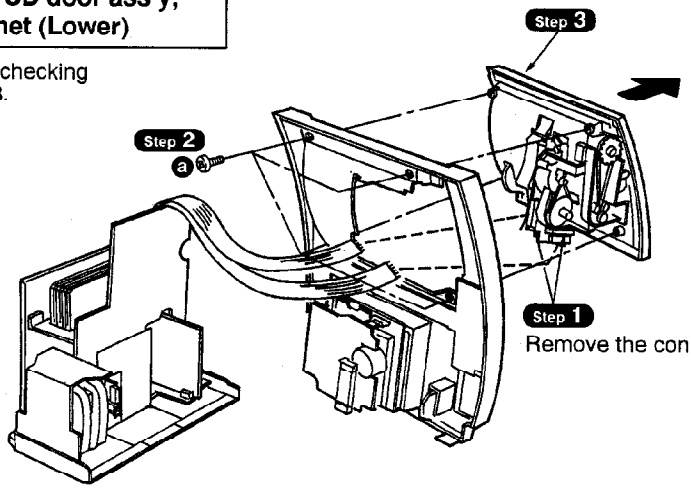



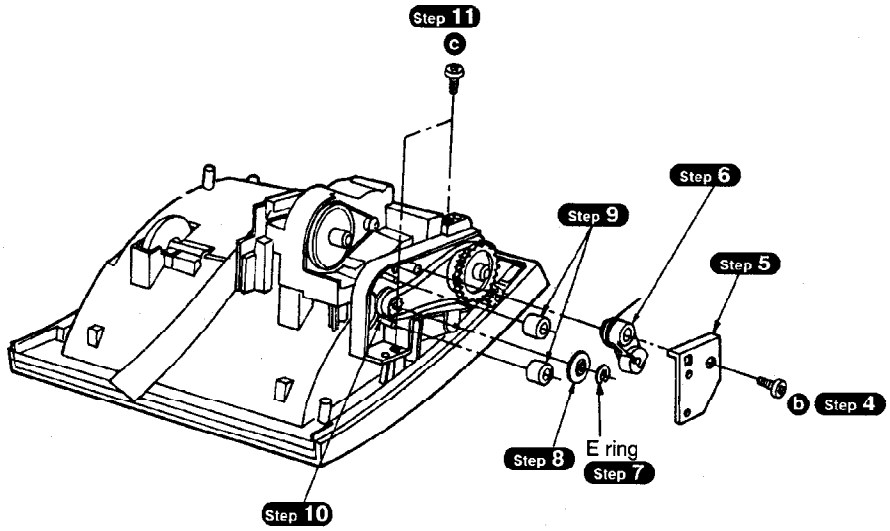



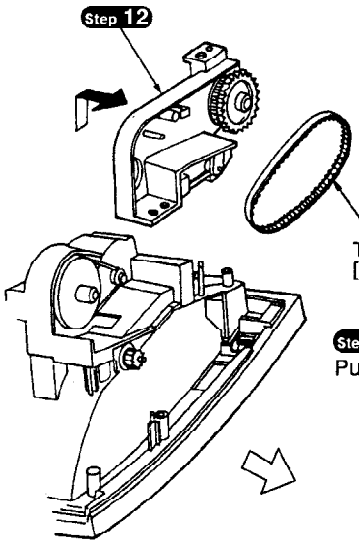
[XTB3+8JFZ] (Black) [XYN26+C5]

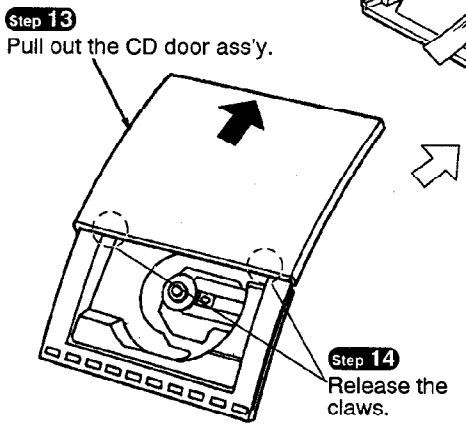
## 3. Replacement for the timing belt, CD door ass'y, CD cabinet (Upper) and CD cabinet (Lower)

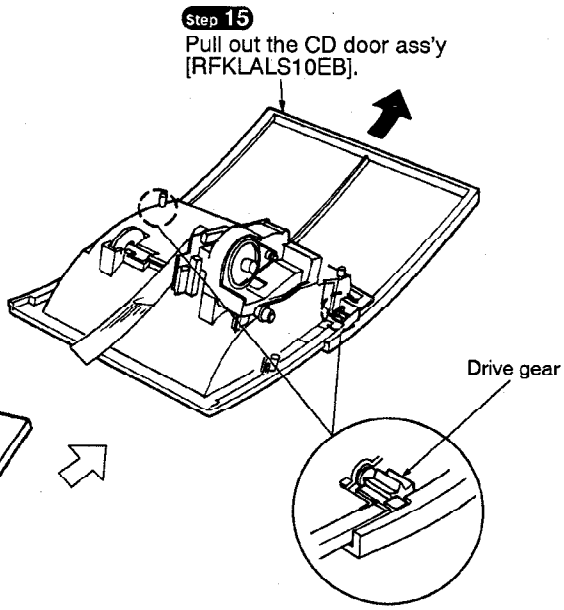
•Follow the item 1( Step 1 ~ Step 5 ) In checking procedures for each P.C.B. on page 38.



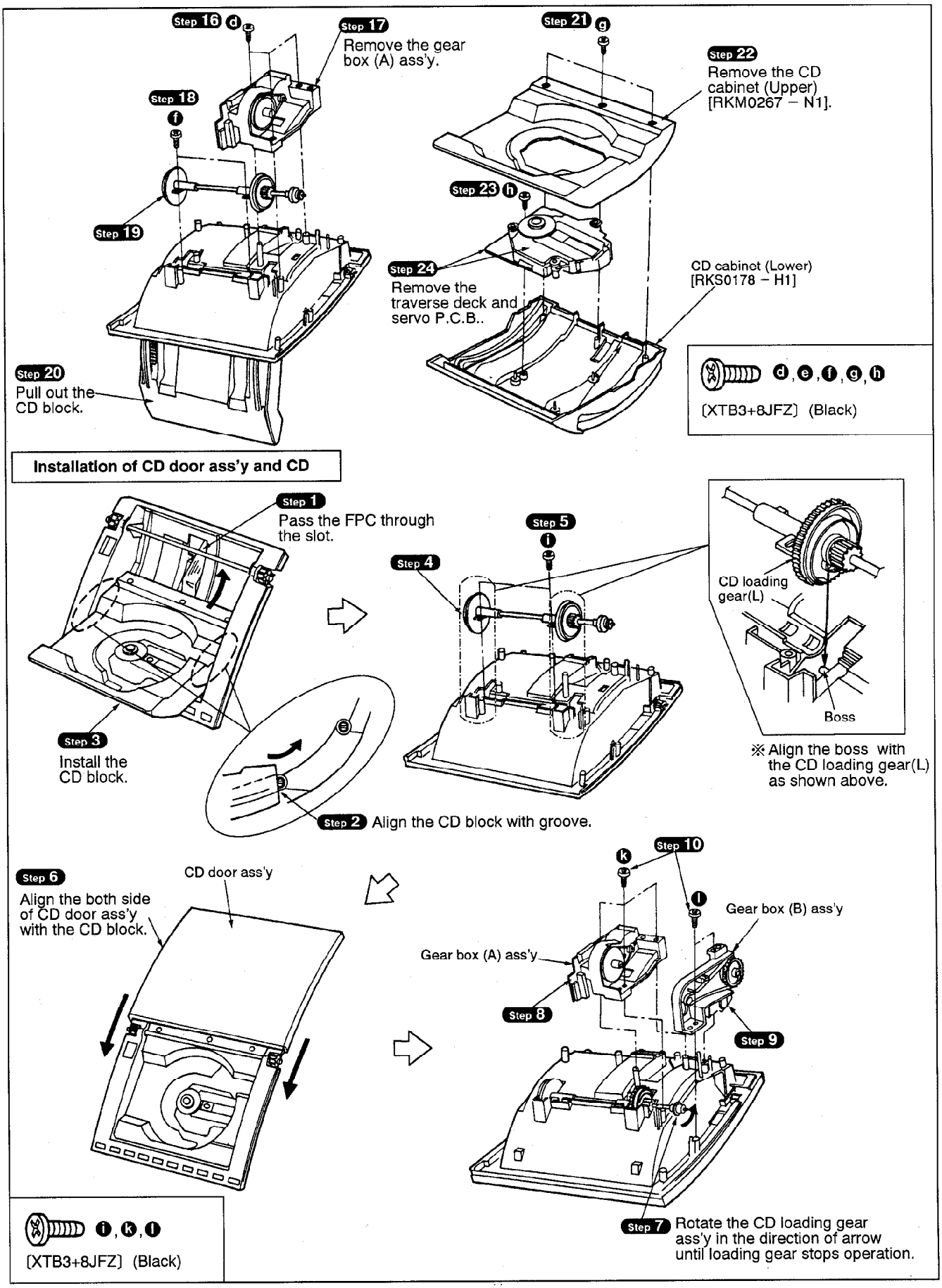



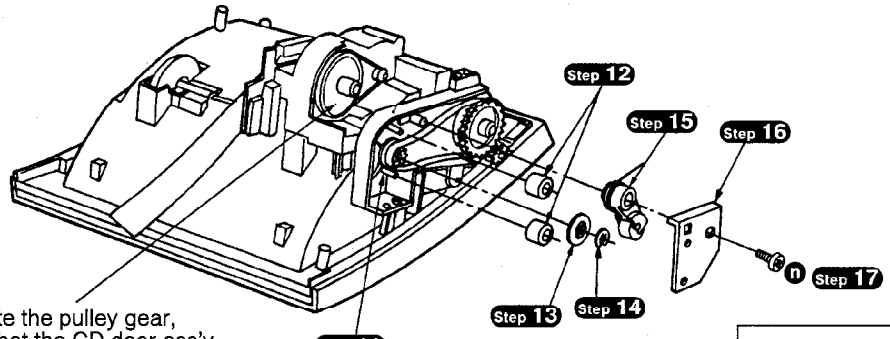

a, b, c

[XTB3+8JFZ] (Black)

**NOTE**

Even if the drive gear is not easy to be removed, pull out the drive gear.


Step 16 d
Step 17
Remove the gear box (A) ass'y.
Step 18 f
Step 19
Step 20
Pull out the CD block.
Step 21 g
Step 22
Remove the CD cabinet (Upper) [RKM0267 – N1].
Step 23 h
Step 24
Remove the traverse deck and servo P.C.B..
CD cabinet (Lower) [RKS0178 – H1]
d, e, f, g, h
[XTB3+8JFZ] (Black)
Installation of CD door ass'y and CD
Step 1
Pass the FPC through the slot.
Step 3
Install the CD block.
Step 2 Align the CD block with groove.
Step 4
Step 5 i
CD loading gear(L)
Boss
※Align the boss with the CD loading gear(L) as shown above.
Step 6
Align the both side of CD door ass'y with the CD block.
CD door ass'y
Step 10 k l
Gear box (B) ass'y
Gear box (A) ass'y
Step 8
Step 9
Step 7 Rotate the CD loading gear ass'y in the direction of arrow until loading gear stops operation.
i, k, l
[XTB3+8JFZ] (Black)



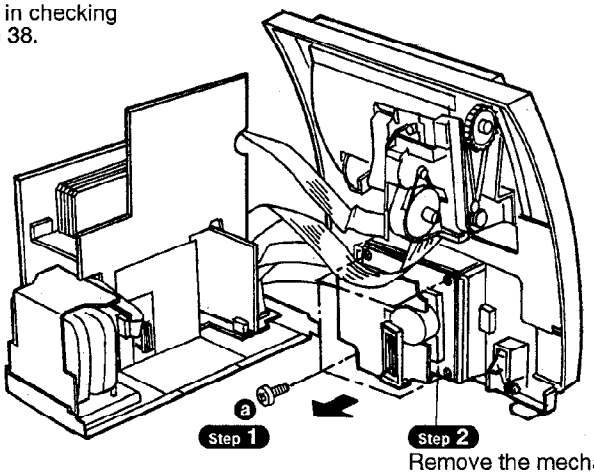

※ After installation, rotate the pulley gear, and then make sure that the CD door ass'y and CD block will be operated.

Step 11
Install the timing belt on the gear(A).

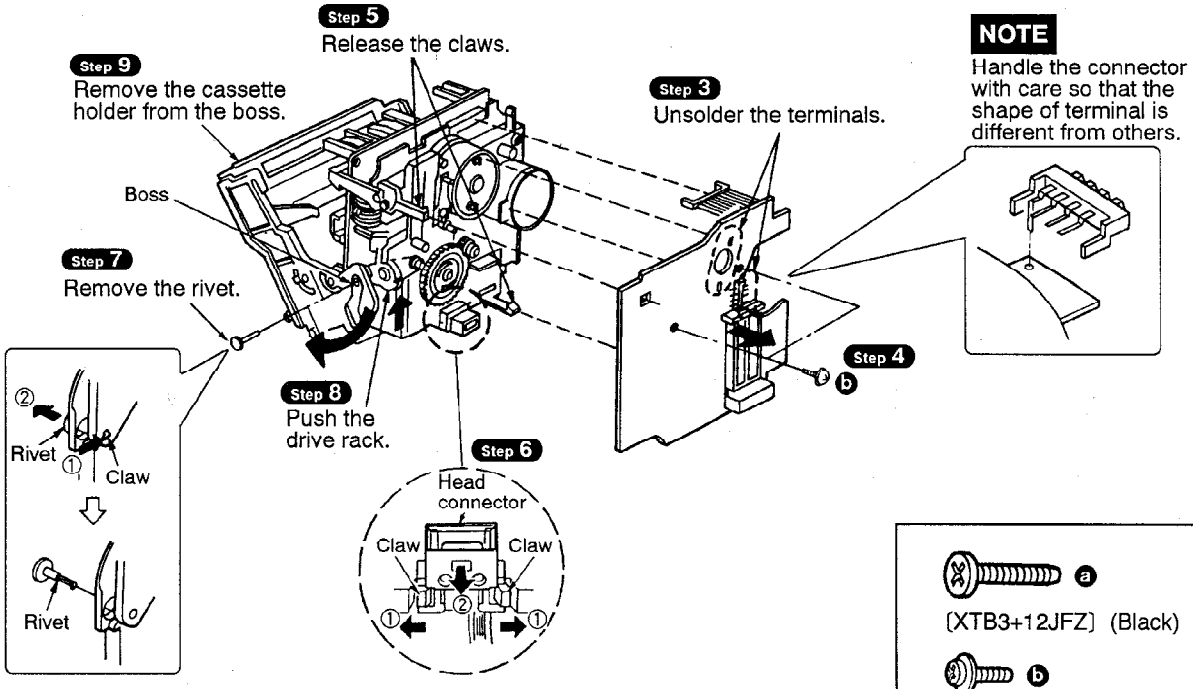
ⓝ
[XTB3+8JFZ] (Black)

## 4. Replacement for the head block ass'y and pinch arm unit

•Follow the item 1( Step 1 ~ Step 5 ) in checking procedures for each P.C.B. on page 38.



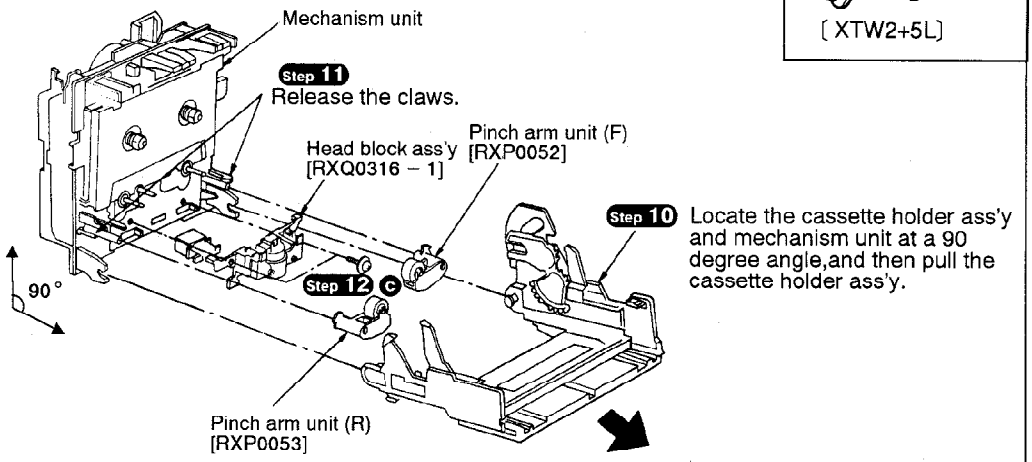

Remove the mechanism unit.



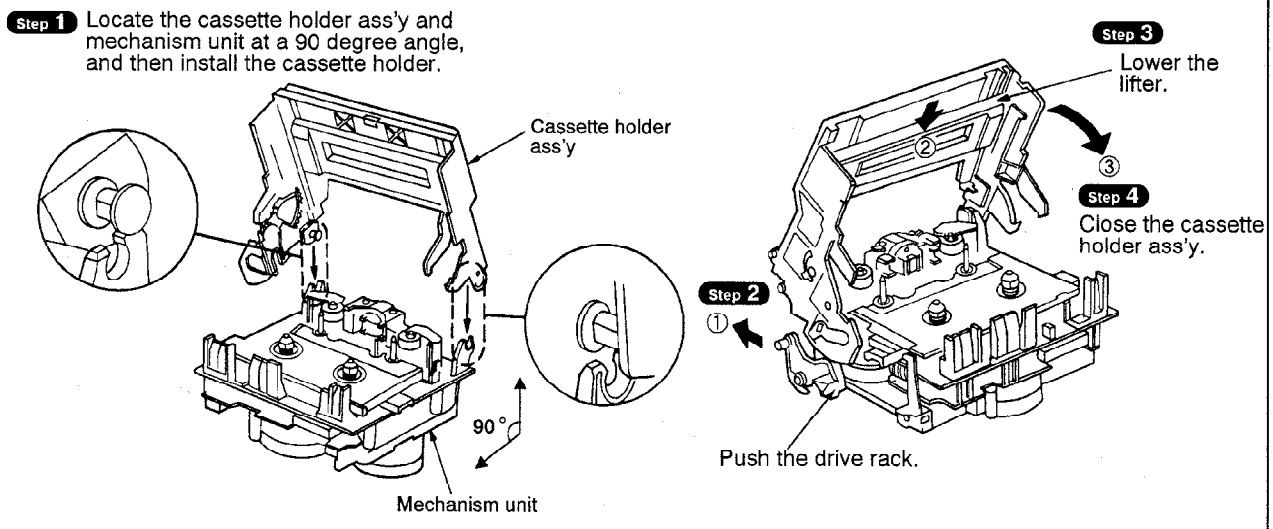

**NOTE**
Handle the connector with care so that the shape of terminal is different from others.

ⓐ
[XTB3+12JFZ] (Black)

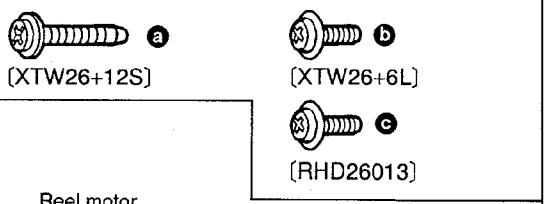
ⓑ
[XTW2+6S]


Mechanism unit
Step 11
Release the claws.
Head block ass'y [RXQ0316 – 1]
Pinch arm unit (F) [RXP0052]
Step 10
Locate the cassette holder ass'y and mechanism unit at a 90 degree angle,and then pull the cassette holder ass'y.
90°
Step 12
c
Pinch arm unit (R) [RXP0053]

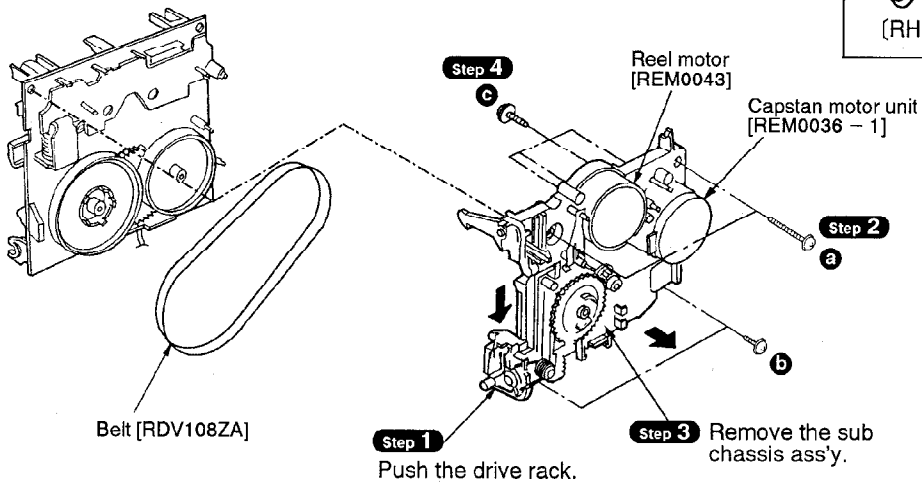
**Installation of the cassette holder ass'y after replacement**


Step 1
Locate the cassette holder ass'y and mechanism unit at a 90 degree angle, and then install the cassette holder.
Cassette holder ass'y
90°
Mechanism unit
Step 3
Lower the lifter.
Step 4
Close the cassette holder ass'y.
Step 2
Push the drive rack.

## 5. Replacement for the belt, reel motor, capstan motor

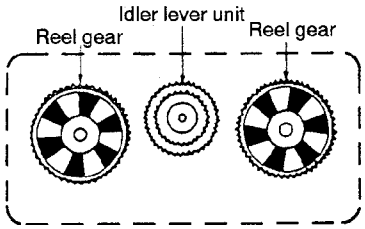



• Follow the Step 1 ~ Step 9 in item 4 of main component replacement procedures on page 45.

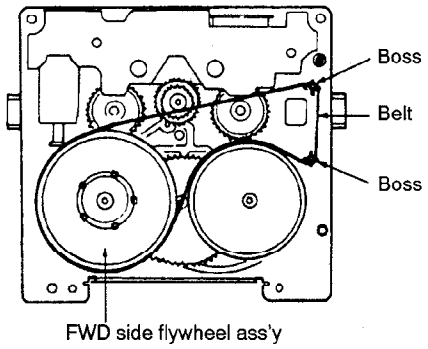


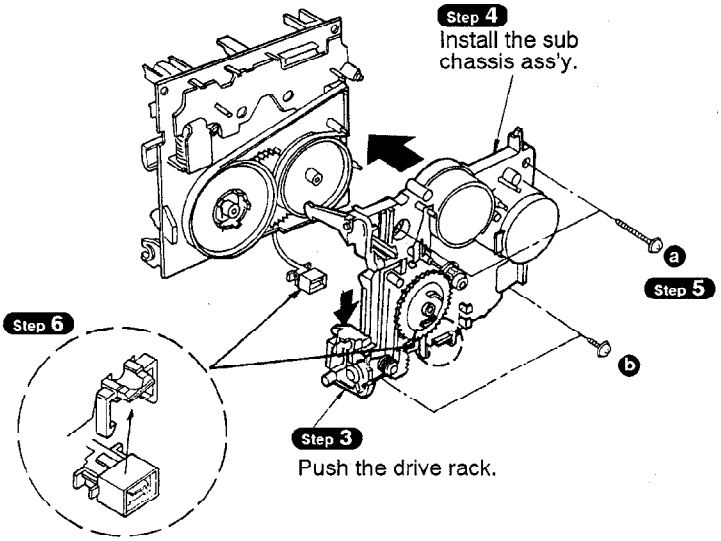
**Installation of the sub chassis ass'y after replacement**

**Step 1** Place the idler lever unit in the center as shown below.

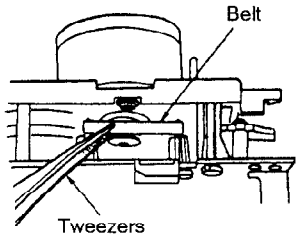


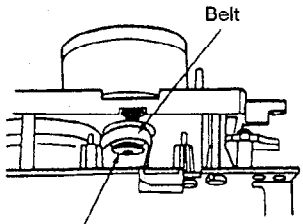

**Step 2** Temporarily secure the belt as shown below.




**Step 7**
Secure the belt with the capstan motor pulley.



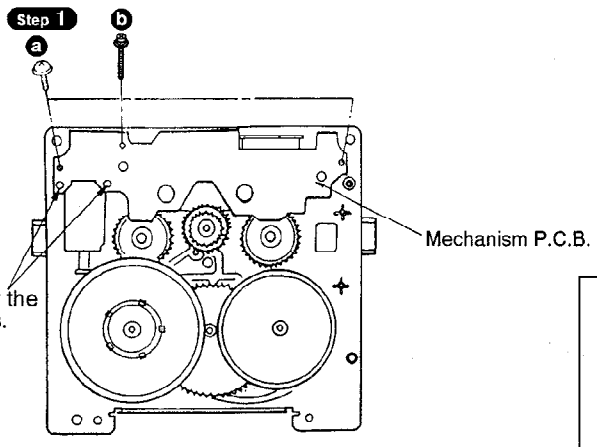



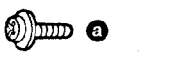
[XTW26+12S]

[XTW26+6L ]

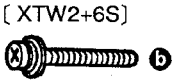
## 3. Replacement for the solenoid and the parts mounted on mechanism P.C.B.

- Follow the **Step 1** ~ **Step 3** in item 5 of main component procedures on page 46.

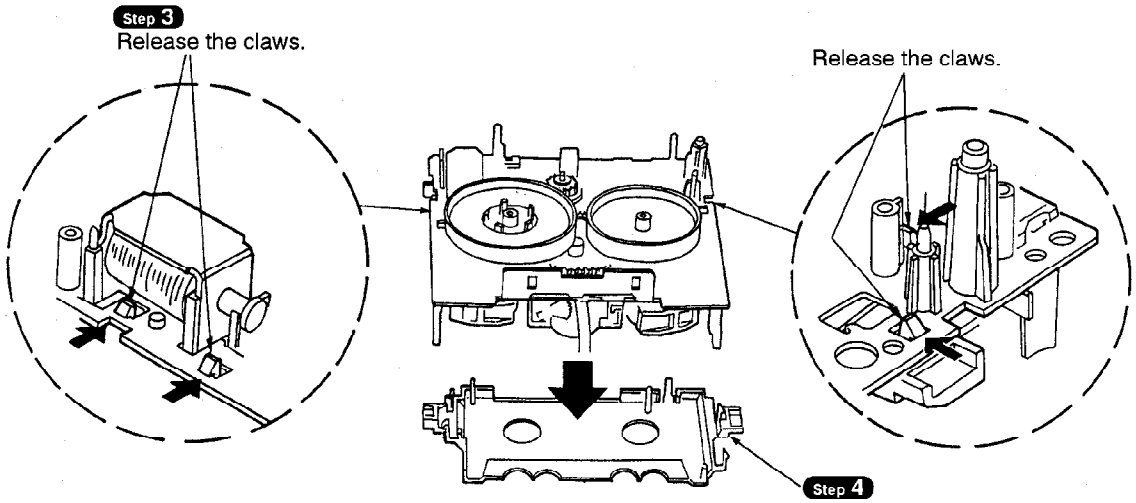


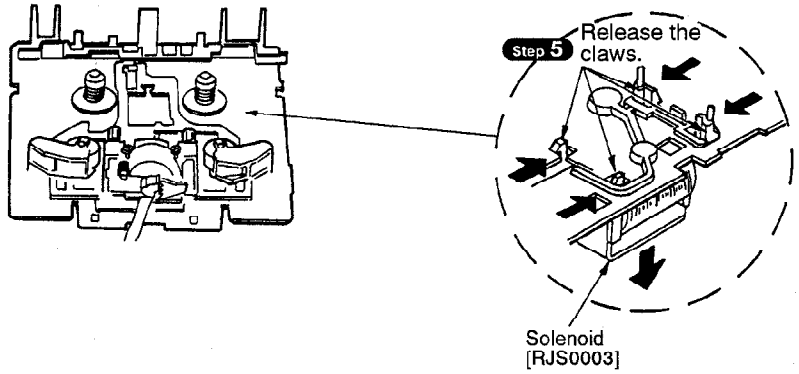



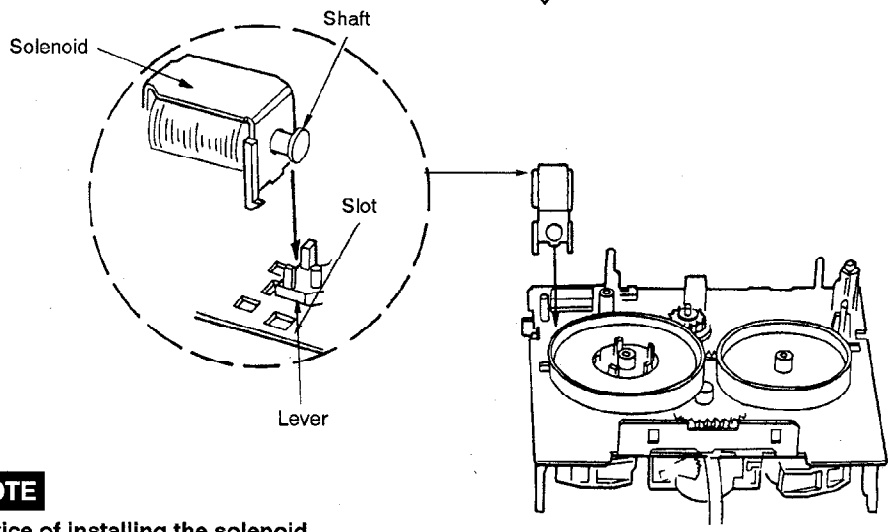

[ XTW2+6S]




[ XYC2+JF16]




**NOTE**

**Notice of installing the solenoid**

- The shaft of solenoid should be aligned with the slot of lever.

# ■ MEASUREMENTS AND ADJUSTMENTS

**• Cassette deck section**

- **Measurement Condition**
  - Dolby NR switch; Off
  - Make sure heads are clean
  - Make sure capstan and pressure roller are clean
  - Judgeable room temperature 20±5°C (68±9°F)
- **Measuring instrument**
  - EVM (Electronic Voltmeter)
  - Oscilloscope
  - Digital frequency counter
- **Test tape**
  - QZZCWAT; Tape speed adjustment (3kHz, −10dB).
  - QZZCFM; Head azimuth adjustment (8kHz, −20dB).
    - Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, −20dB).
    - Playback gain adjustment (315Hz, 0dB).
  - QZZCRA; Overall frequency response, Overall gain adjustment Normal reference blank tape.
  - QZZCRX; $CrO_2$ reference blank tape.
  - QZZCRZ; Metal reference blank tape.

## HEAD AZIMUTH ADJUSTMENT

**Caution:**

- Please replace both azimuth adjustment screws (RHD17015) used for to new ones simultaneously when readjusting the head azimuth. (Shown in Fig. 2.)
  Even if you wish to readjust the head azimuth without replacing the screws, a fine adjustment can not be done because of the screw-locking bond adhered to the azimuth screw.
- Please remove the screw-locking bond left on the head base when replacing the azimuth screw.
- If you wish to readjust the head azimuth, be sure to adjust with adhering the cassette tape closely to the mechanism by pushing the center of cassette tape with your finger. (Shown in Fig. 3.)

1. Playback the azimuth adjustment portion (8kHz, −20dB) of the test tape (QZZCFM) in the forward play mode. Vary the azimuth adjusting screw until the output of the R-CH are maximized.
2. Perform the same adjustment in the reverse play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

## CHECK THE LEVEL (FORWARD AND REVERSE)

4. Playbeck the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM) in the forward play mode.
   Perform the same adjustment in the reverse play mode.
   Assure that the levels are within 1dB of each other.
5. After adjustment, adhere the screw-locking bond to azimath screw.

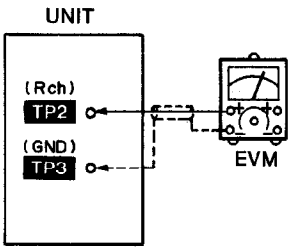



Fig. 1

Fig. 2

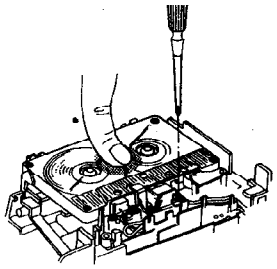


Fig. 3

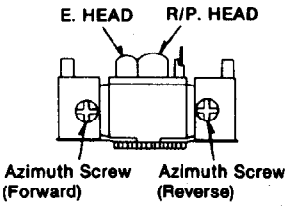



Fig. 4

## TAPE SPEED ADJUSTMENT

(Standard Value: 3000±45Hz)

1. Playback the middle portion of the test tape (QZZCWAT).
2. Adjust **VR603** so that the output is within the adjustment target.

**Adjustment target: 3000Hz±20Hz**

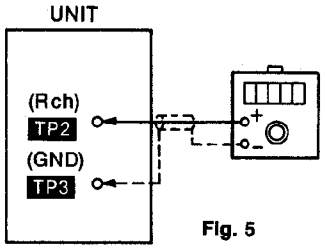



Fig. 5

## PLAYBACK GAIN ADJUSTMENT

1. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust **VR601** (L-CH) [[**VR602** (R-CH)]] so that the output is within the adjustment target.

**Standard value: 285mV±1.0dB**

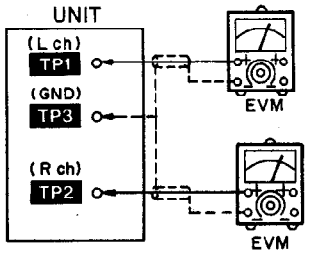



Fig. 6

## PLAYBACK FREQUENCY RESPONSE

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, −20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in **Fig. 8** for both L-CH and R-CH.

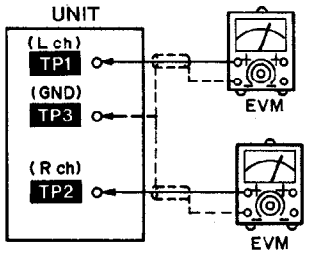



Fig. 7

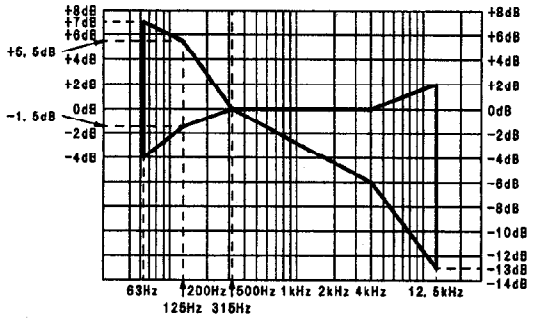



Fig. 8

## ERASE CURRENT CONFIRMATION

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record Pause mode.
2. Assure so that the output between TP4 (+) and TP5 (−) is within the adjustment target.

**Standard value: 33mV±3mV**

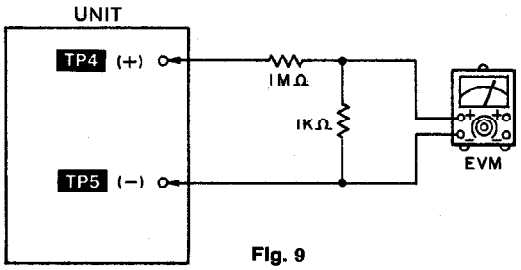



Fig. 9

- **Adjustment points**

〈**Cassette deck section**〉

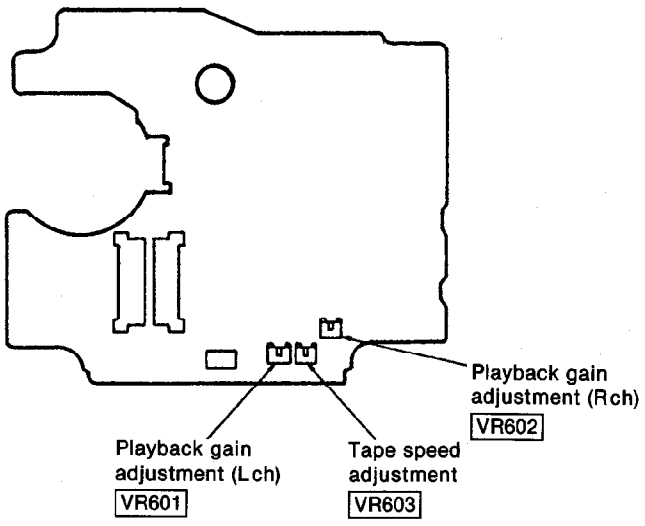



Fig. 10

## • Compact disc player section

**Warning:** This product uses a laser diode. Refer to caution statements on page 3.

**ACHTUNG:** • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

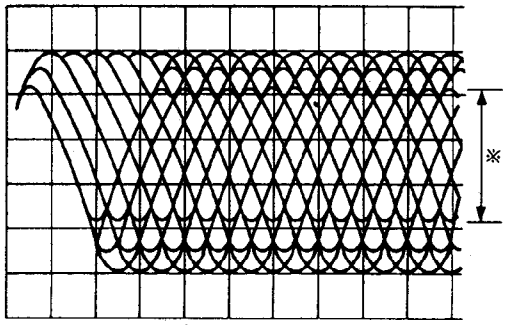
### Measuring Instruments and Special Tools

* Test discs
  1. SZZP1054C (Playability test disc).
  2. SZZP1056C (Uneven test disc).
* Musical program disc (ordinary).
* Dual-beam oscilloscope with bandwidth of 30MHz or better (with EXT. trigger and 1:1 probe).
* SZZP1101C (Allen wrench).
* RZZ0L01 (Lock paint).

### (1) MECHANICAL ADJUSTMENT

- When the traverse deck is replaced, making adjustments is not necessary. (The traverse deck ass'y is already adjusted.)
- Make adjustments to improve playability if the traverse deck has not been replaced.
- Refer to the "Checking for the servo P.C.B." before adjustment on page 40.

1. Connect the oscilloscope's CH. 1 probe across TP101 (RF) (+) and TP102 (VREF) (−) on the servo P.C.B. (Refer to Fig. 12 on page 52.)
   **Oscillosocpe setting:** VOLT ..... 100mV
   SWEEP..... 0.5μs.
   Input coupling ..... AC
2. Switch the player power **ON**, and play track **19** on the test disc (SZZP1056C).
3. Alternately adjust the HEX screws with the 2.0mm allen wrench (SZZP1101C) until the vertical fluctuation of RF signal is minimized and the eye pattern is most stretched.
   (Refer to Fig. 13 on page 52.)
4. After completing the adjustment, lock the HEX screws with lock paint (RZZ0L01).




※ Most stretched eye pattern.

**Fig. 11**

### (2) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

* **Checking Skip Search**

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

* **Checking Manual Search**

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

* **Checking Playability**

1. Play the 0.7mm black dot and the 0.7mm wedge on the test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

• **Adjustment points**

〈**Compact disc player section**〉

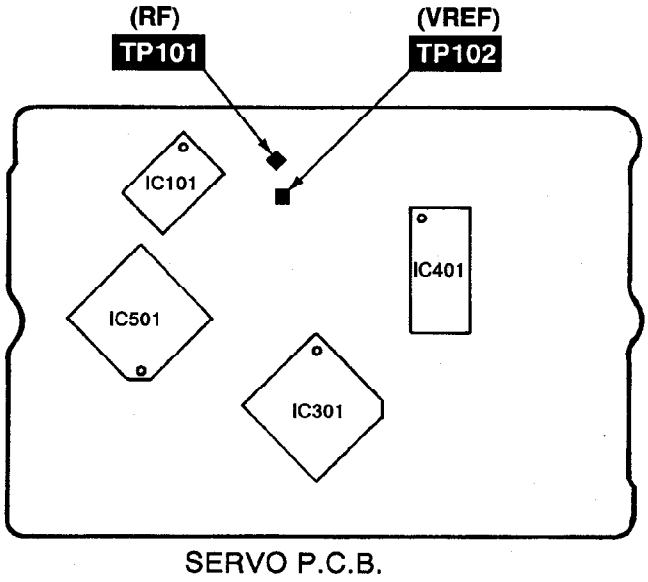



**Fig. 12**

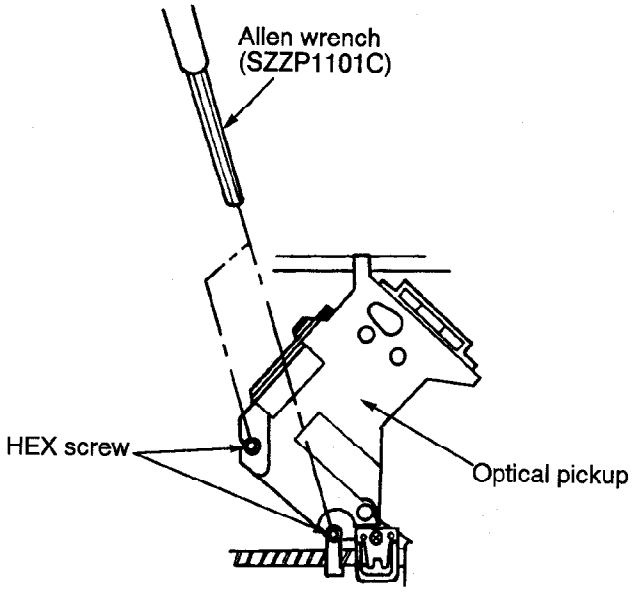



**Fig. 13**

## ■ NEW DIGITAL SERVO CIRCUIT

For this model we have adopted new IC to substantialize "no adjustment required for electric section".
(As for conventional models, the "Best Eye Adjustment" has been required.)

# ■ TERMINAL FUNCTION OF IC'S

## • IC501 (MN662740RE): Servo processor/digital signal processor/digital filter/D/A converter

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 1 | BCLK | O | Serial bit clock output |
| 2 | LRCK | O | L/R discriminating signal output |
| 3 | SRDATA | O | Serial data signal output |
| 4 | $DV_{DD}1$ | I | Power supply (digital circuit) terminal |
| 5 | $DV_{SS}1$ | — | GND (digital circuit) terminal |
| 6 | TX | O | Digital audio interface signal (Not used, open) |
| 7 | MCLK | I | Command clock signal |
| 8 | MDATA | I | Command data signal |
| 9 | MLD | I | Command load signal ("L": LOAD) |
| 10 | SENSE | O | Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open) |
| 11 | FLOCK | O | Optical servo condition (focus) ("L": lead-in) (Not used, open) |
| 12 | TLOCK | O | Optical servo condition (tracking) ("L": lead-in) (Not used, open) |
| 13 | BLKCK | O | Sub-code block clock (f=75Hz) (Not used, open) |
| 14 | SQCK | I | Sub-code Q register clock |
| 15 | SUBQ | O | Sub-code Q data |
| 16 | DMUTE | I | Muting input ("H": MUTE) (Not used, connected to GND) |
| 17 | STAT | O | Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK) |
| 18 | RESET | I | Reset signal ("L": reset) |
| 19 | SMCK | O | System clock (f=4.2336MHz) |
| 20 | PMCK | O | Frequency division clock signal ($f=\frac{1}{1.92}\times ck=88.2kHz$) |
| 21 | TRV | O | Traverse servo control |
| 22 | TVD | O | Traverse drive signal |
| 23 | PC | O | Turntable motor drive signal ("L": ON) |
| 24 | ECM | O | Turntable motor drive signal (Forced mode) |
| 25 | ECS | O | Turntable motor drive signal (Servo error signal) |
| 26 | KICK | O | Kick pulse output |
| 27 | TRD | O | Tracking drive signal output |
| 28 | FOD | O | Focus drive signal output |
| 29 | VREF | I | D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal |
| 30 | FBAL | O | Focus balance adj. output (Not used, open) |
| 31 | TBAL | O | Tracking balance adj. output |
| 32 | FE | I | Focus error signal (analog input) |
| 33 | TE | I | Tracking error signal (analog input) |
| 34 | RFENV | I | RF envelope signal |
| 35 | VDET | I | Oscillation det. signal ("H": det.) |
| 36 | OFTR | I | Off track signal ("H": Off track) |
| 37 | TRCRS | I | Track cross signal input |
| 38 | RFDET | I | RF detection signal ("L": detection) |
| 39 | BDO | I | Dropout detection signal ("H": dropout) |
| 40 | LDON | O | Laser power control ("H": ON) |
| 41 | TES | O | Tracking error shunt output ("H": dropout) |
| 42 | PLAY | O | Play signal ("H": play) |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 43 | WVEL | O | Double velocity status signal ("H": double) (Not used, open) |
| 44 | ARF | I | RF signal input |
| 45 | IREF | I | Reference current input |
| 46 | DRF | I | DSL bias terminal (Not used, connected to GND) |
| 47 | DSLF | I/O | DSL loop filter terminal |
| 48 | PLLF | I/O | PLL loop filter terminal |
| 49 | VCOF | I | VCO loop filter terminal (Not used, connected to $AV_{DD}2$) |
| 50 | $AV_{DD}2$ | I | Power supply (analog circuit) terminal (2) |
| 51 | $AV_{SS}2$ | — | GND (analog circuit) terminal |
| 52 | EFM | — | EFM signal output (Not used, open) |
| 53 | PCK | — | PLL extract clock (f=4.3218MHz) (Not used, open) |
| 54 | PDO | — | Tracking servo OFF signal (Not used, open) |
| 55 | SUBC | — | Sub-code serial output data (Not used, open) |
| 56 | SBCK | — | Sub-code serial input clock (Not used, open) |
| 57 | $V_{SS}$ | — | GND terminal |
| 58 | X1 | I | Crystal oscillator terminal (f=16.9344MHz) |
| 59 | X2 | O | |
| 60 | $V_{DD}$ | I | Power supply terminal |
| 61 | BYTCK | O | Bite clock output terminal (Not used, open) |
| 62 | CLDCK | O | Sub-code frame clock signal (f CLDCK=7.35kHz: Normal) (Not used, open) |
| 63 | FCLK | O | Crystal frame clock (Not used, open) |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 64 | IPFLAG | O | Interpolation flag terminal (Not used, open) |
| 65 | FLAGO | O | Flag terminal (Not used, open) |
| 66 | CLVS | O | Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open) |
| 67 | CRC | O | Sub-code CRC check terminal ("H": OK, "L": NG) (Not used, open) |
| 68 | DEMPHA | O | De-emphasis ON signal ("H": ON) (Not used, open) |
| 69 | RESY | O | Re-synchronizing signal of frame sync. (Not used, open) |
| 70 | /RST2 | I | Reset terminal after "MASH" circit ("L": Reset) |
| 71 | TEST | I | Test terminal (Normal: "H") |
| 72 | $AV_{DD}1$ | I | Power supply (analog circuit) terminal (1) |
| 73 | OUTL | O | Lch audio signal |
| 74 | $AV_{SS}1$ | — | GND (analog circuit) terminal (1) |
| 75 | OUTR | O | Rch audio signal |
| 76 | RSEL | I | Polarity direction control terminal of RF signal (Not used, connected to power supply) |
| 77 | CSEL | I | Frequency control terminal of crystal oscillator (Not used, connected to GND) |
| 78 | SRSEL | I | Serial data signal input |
| 79 | MSEL | I | "SMCK" terminal frequency select (Not used, open) ("L": SMCK=4.2336MHz) ("H": SMCK=8.4672MHz) |
| 80 | SSEL | I | "SUBQ" terminal mode select ("H": Q code buffer) |
| | | | |

## • IC101 (AN8832SBE1): Servo amp

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 1 | PDAD | I | Photo detector current input |
| 2 | PDA | I | Photo detector current input |
| 3 | LPD | I | Non-inverting laser power input |
| 4 | LD | O | Laser power auto control output |
| 5 | AMPI | I | RF signal input<br>Not used, connected to $V_{CC}$ |
| 6 | $V_{CC}$ | I | Power supply terminal |
| 7 | RFIN | I | RF signal input |
| 8 | CAGC | I | AGC detecting capacitor terminal |
| 9 | ARF | O | RF signal output |
| 10 | CEA | I | HPF-amp. terminal |
| 11 | GND | — | Ground terminal |
| 12 | LDON | I | Laser ON/OFF control input |
| 13 | PLAY | I | Play control terminal |
| 14 | WVEL | — | WVEL control terminal<br>Not used, open |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 15 | BDO | O | Dropout detection output |
| 16 | RFDET | O | NRFDET signal output |
| 17 | TRCRS | O | CROSS signal output |
| 18 | OFTR | O | OFTR signal output |
| 19 | VDET | O | VDET signal output |
| 20 | RFENV | O | Envelope signal output |
| 21 | TEBPF | I | Shock detection signal input |
| 22 | TE | O | Tracking error signal output |
| 23 | FE | O | Focus error signal output |
| 24 | TBAL | I | Tracking balance signal input |
| 25 | FBAL | I | Focus balance signal input |
| 26 | VREF | O | Reference voltage output |
| 27 | PDB | I | Photo detector current input |
| 28 | PDBD | I | Photo detector current input |

## • IC301 (LC66306A4D87): CD System control

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 1 | RESTSW | I | Rest detect input terminal |
| 2 | SERVO RST | O | Servo reset output |
| 3 | STAT | I | Processing status (CRC, CUE, CLVS, FCLV, TTSTOP) input terminal |
| 4 | SUBQ | I | Sub-cord (Q data) output terminal |
| 5 | DMUTE | O | Muting output terminal ("H": MUTE) |
| 6 | NC | — | No connection |
| 7 | SQCK | O | Sub-cord Q resistor external clock signal terminal |
| 8 | BLKCK | I | Sub-code block clock signal input (f=BLKCK=75Hz, in normal play mode) |
| 9 | NU | — | Not used, connected to power supply |
| 10 | GMUTE | — | Not used, open |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 11 | NU | — | Not used, open |
| 12 | NU | — | Not used, connected to power supply |
| 13 | MLD | O | Microcomputer command load signal output terminal |
| 14 | MDATA | O | Microcomputer command data signal output terminal |
| 15 | TEST | I | CPU test terminal |
| 16 | VSS | — | GND terminal |
| 17 | OSC1 | I | System clock oscillator external mount terminal |
| 18 • 19 | NC | — | No connection |
| 20 | OSC2 | O | Not used, open |
| 21 | /RESET | I | Reset signal input terminal |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 22 | MCLK | O | Microcomputer command clock signal output terminal |
| 23 • 24 | NU | — | Not used, open |
| 25 | NU | — | Not used, open |
| 26 | CS | I | Chip select input terminal |
| 27 | REQ | — | Not used, connected to power supply |
| 28 | DT | I | Serial data signal input |
| 29 | DT | O | Serial data signal output |
| 30 | NC | — | No connection |
| 31 | CLK | O | Serial clock signal output |
| 32 | VCS | — | Not used, open |
| 33 | VCLK | O | ASP control clock signal output terminal |
| 34 | VDATA I/O | — | Not used, open |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 35 ∫ 37 | NU | — | Not used, connected to GND |
| 38 | VREQ | I | Request signal input terminal |
| 39 | VDD | I | Power supply terminal |
| 40 | CLOSESW | I | Disk close detect terminal |
| 41 | OPENSW | I | Disk open detect terminal |
| 42 • 43 | NC | — | No connection |
| 44 | /CLOSE | — | Not used, open |
| 45 | /OPEN | — | Not used, open |
| 46 | SENSE | I | Sense signal input terminal (OFT, FSEL, NACEND, NAJEND, POSAD, SFG) |
| 47 | /FLOCK | I | Optical servo condition (focus) ("L": Lead-in) |
| 48 | /TLOCK | I | Optical servo condition (tracking) ("L": Lead-in) |

## • IC401 (BA6890FPE1): Motor drive

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 1 | BIAS | I | Bias input terminal |
| 2 | IN1 | I | CH1 input terminal |
| 3 | MUTE1 | I | CH1 mute terminal |
| 4 | IN2 | I | CH2 input terminal |
| 5 | MUTE2 | I | CH2 mute terminal |
| 6 | NC | — | Test terminal |
| 7 | PREGND | — | Preamp GND terminal |
| 8 • 9 | PWGND | — | Preamp GND terminal |
| 10 | VCCPOW | I | Power supply terminal |
| 11 | OUT2− | O | CH2− output terminal |
| 12 | OUT2+ | O | CH2+ output terminal |
| 13 | OUT1− | O | CH1− output terminal |
| 14 | OUT1+ | O | CH1+ output terminl |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 15 | OUT4+ | O | CH4+ output terminal |
| 16 | OUT4− | O | CH4− output terminal |
| 17 | OUT3+ | O | CH3+ output terminal |
| 18 | OUT3− | O | CH3− output terminal |
| 19 | VCCPOW | I | Power supply terminal |
| 20 • 21 | PWGND | — | Power amp GND terminal |
| 22 | PREGND | — | Preamp GND terminal |
| 23 | NC | — | No connection |
| 24 | MUTE3 | I | CH3 mute terminal |
| 25 | IN3 | I | CH3 input terminal |
| 26 | MUTE4 | I | CH4 mute terminal |
| 27 | IN4 | I | CH4 input terminal |
| 28 | VCCPRE | I | Preamp power supply terminal |

## • IC201 (MSM6650GSV1K): Voice composition

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 1 • 2 | NC | — | No connection |
| 3 | /BUSY | O | Voice emission output terminal ("L": Voice emission, "H": Power on) |
| 4 | NAR | O | Address latch I0~I6 empty status detect signal ("H": empty) |
| 5 | AOUT | O | Built-in LPF voice output terminal |
| 6 | AGND | — | GND (analog circuit) terminal |
| 7 | DGND | — | GND (digital circuit) terminal |
| 8 | AVDD | — | Power supply (analog circuit) terminal |
| 9 | DVDD | — | Power supply (digital circuit) terminal |
| 10 | XT | I | Ceramic oscillator input terminal |
| 11 | /XT | O | Ceramic oscillator output terminal |
| 12 | MCK | O | Main clock output terminal |
| 13 | /CMD | I | Command input, option control terminal (ST="L" at /CMD="L" →option input) |
| 14 | /ST | I | Strobe signal input |
| 15 | /TEST1 | I | Test terminal |
| 16 | CPU | I | Usually used at "H" (connected to power supply) |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 17 | SIRIAL | I | Parallel input interface terminal at "L" |
| 18 | /1BUSY | — | Not used, open |
| 19 | NC | — | No connection |
| 20 | /STBY | — | Not used, open |
| 21 ∫ 27 | I0 ∫ I6 | I | Command and user designated phrase input (during parallel input interface) |
| 28 | /CH | I | Channel control signal ("H"=1ch, "L"=2ch) |
| 29 | /RST | I | Reset signal input terminal ("L": reset) |
| 30 | /CE | O | External memory read control timing terminal (/RCS="L": output) |
| 31 | /RCS | I | RA22~RA0 and /CE output at "L" (connected to GND) |
| 32 | D0 | I | External memory data input terminal (/RCS="L": data input) |
| 33 | NC | — | No connection |
| 34 ∫ 40 | D1 ∫ D7 | I | External memory data input terminal (/RCS="L": data input) |
| 41 ∫ 63 | RA0 ∫ RA22 | O | External memory address terminals (/RCS="L": output) |
| 64 | /TEST2 | I | Test terminal |
| | | | |

## • IC202 (LH5347N4): 4M ROM

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 1 | OE1/$\overline{OE1}$ /DC | — | Not used, open |
| 2 ∫ 12 | A16 ∫ A0 | I | Address input terminal |
| 13 ∫ 15 | D0 ∫ D2 | O | Data output terminal |
| 16 | VSS | — | GND terminal |
| 17 ∫ 21 | D3 ∫ D7 | O | Data output terminal |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 22 | /CE | I | Chip enable terminal |
| 23 | A10 | I | Address input terminal |
| 24 | /OE | I | Output enable terminal |
| 25 ∫ 31 | A11 ∫ A18 | I | Address input terminal |
| 32 | VCC | I | Power supply (+5V) terminal |
| | | | |

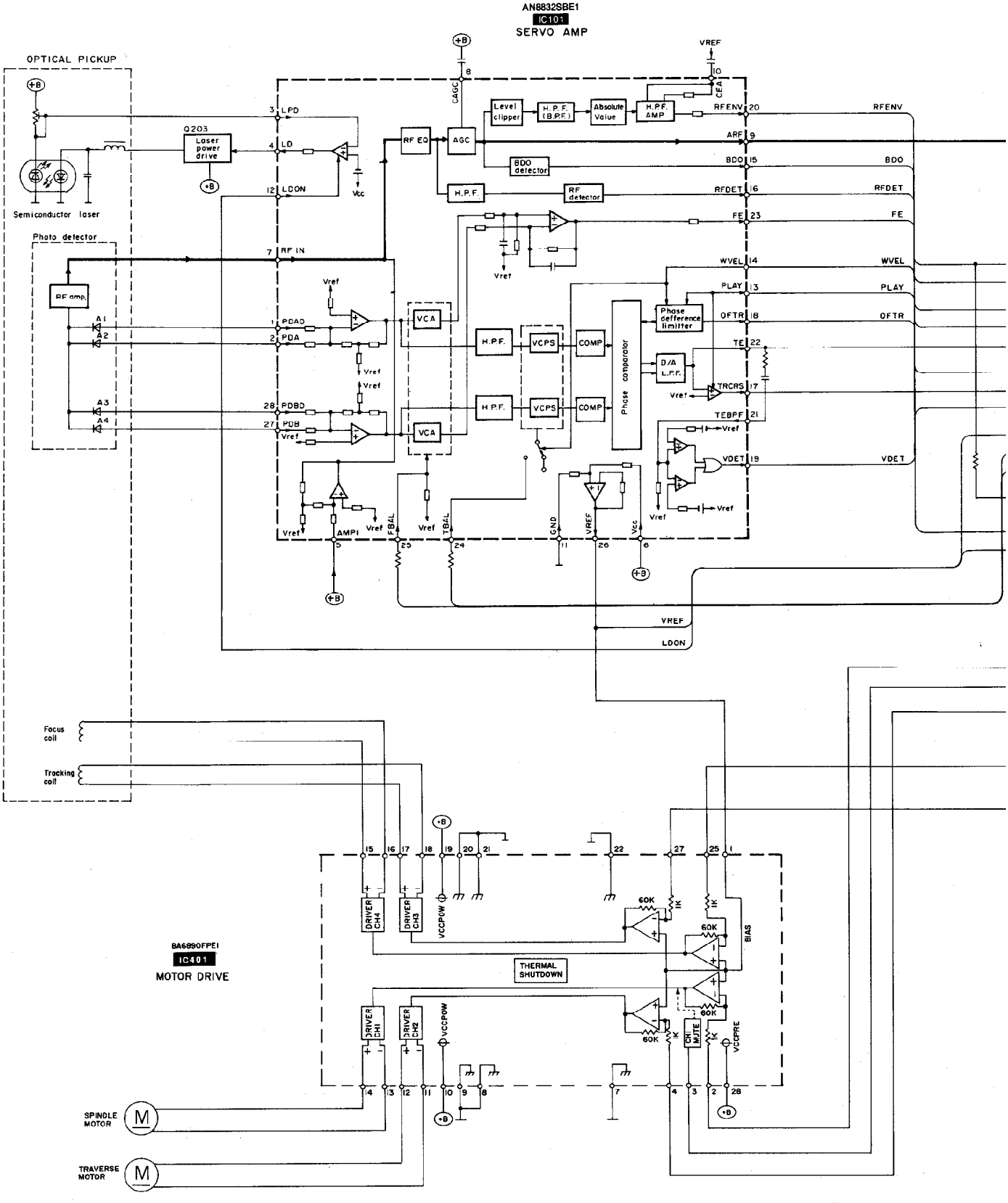
## • IC601 (UPD78044A077): System control & FL drive

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 1 ∫ 7 | DGT6 ∫ DGT0 | O | FL digit signal output terminal |
| 8 | VDD | I | Power supply terminal |
| 9 | P-CONT | O | Power supply control signal output terminal |
| 10 | MUTE | O | Muting control signal output terminal |
| 11 | CD-RST | O | Reset signal output (CD player) |
| 12 | CD-CS | O | Chip select signal output (CD player) |
| 13 | CD-REQ | O | Request signal output (CD player) |
| 14 | CD-CLK | O | Clock signal output (CD player) |
| 15 | CD-SO | O | Serial data control output terminal (CD player) |
| 16 | CD-SI | I | Serial data input (CD player) |
| 17 | /RESET | I | Reset signal input terminal |
| 18 | CD-SW1 | I | Disk holder open/close detect terminal ("L": CLOSE, "H": OPEN) |
| 19 | CD-SW0 | I | Disk holder half detect terminal ("L": CLOSE, "H": HALF OPEN) |
| 20 | AVSS | — | GND (analog circuit) terminal |
| 21 | STROBE | I | Strobe signal input terminal |
| 22 | CR-TIM | I/O | CR-Timer detect terminal |
| 23 | AD-SW2 | I | AD converter input (Cassette mechanism switch reel pulse input) |
| 24 | AD-SW1 | I | AD converter input (Cassette mechanism switch and TPS detection) |
| 25 | AD-SW0 | I | AD converter (Cassette mechanism switch detection) |
| 26 ∫ 28 | KEY2 ∫ KEY0 | I | Key switch detect terminal |
| 29 | AVDD | I | Power supply (analog circuit) terminal |
| 30 | AVREF | I | Reference voltage input terminal |
| 31 | XT1 | — | Not used, open |
| 32 | XT2 | — | |
| 33 | VSS | — | GND terminal |
| 34 | X1 | I | Crystal oscillator input/output terminal (f=4MHz) |
| 35 | X2 | O | |
| 36 | VR-LAT | O | ASP control signal output terminal |
| 37 | BUZ | O | Buzzer control output terminal |

| Pin No. | Mark | I/O Division | Function |
|---|---|---|---|
| 38 | VR-DATA/ POL | O | Serial data output |
| 39 | VR-CLK/ MONIT | O | Serial clock output |
| 40 | DECK-DATA | O | Deck mechanism control data output |
| 41 | DEK-LAT | O | Deck mechanism control data latch output |
| 42 | DEK-CLK | O | Deck mechanism control clock output |
| 43 | TU-CE | O | Tuner chip enable output |
| 44 | TUN-DI | O | Tuner control data output |
| 45 | TUN-CLK | O | Tuner control clock output |
| 46 | HALT | I | Power down detect terminal |
| 47 | REMO | I | Remote control data signal input terminal |
| 48 | VPP | — | GND terminal |
| 49 | TUN-DO | I | Tuner reception status input |
| 50 | SD | I | Reception detect terminal |
| 51 | STEREO | I | Stereo status detect terminal ("L": STEREO) |
| 52 | VDD | I | Power supply terminal |
| 53 | LEDCLK | O | LED drive control clock signal |
| 54 | LEDDATA | O | LED drive control data signal |
| 55 | KCLK | O | Voice composition clock signal |
| 56 | KDATA | O | Voice composition data signal |
| 57 | KNAR | O | Address latch I0~I6 empty status detect signal ("H": EMPTY) |
| 58 • 59 | CS1 • CS0 | I | External resistance connection terminal |
| 60 ∫ 64 | SEG0 ∫ SEG4 | O | FL segment signal output terminal |
| 65 ∫ 70 | SEG5 ∫ SEG10 | O | FL segment signal output terminal |
| 71 | −VP | I | Pull down voltage input |
| 72 ∫ 77 | SEG11 ∫ SEG16 | O | FL segment signal output terminal |
| 78 | NC | — | No connection |
| 79 • 80 | DGT8 • DGT7 | O | FL digit signal output terminal |
| | | | |

# ■ BLOCK DIAGRAM

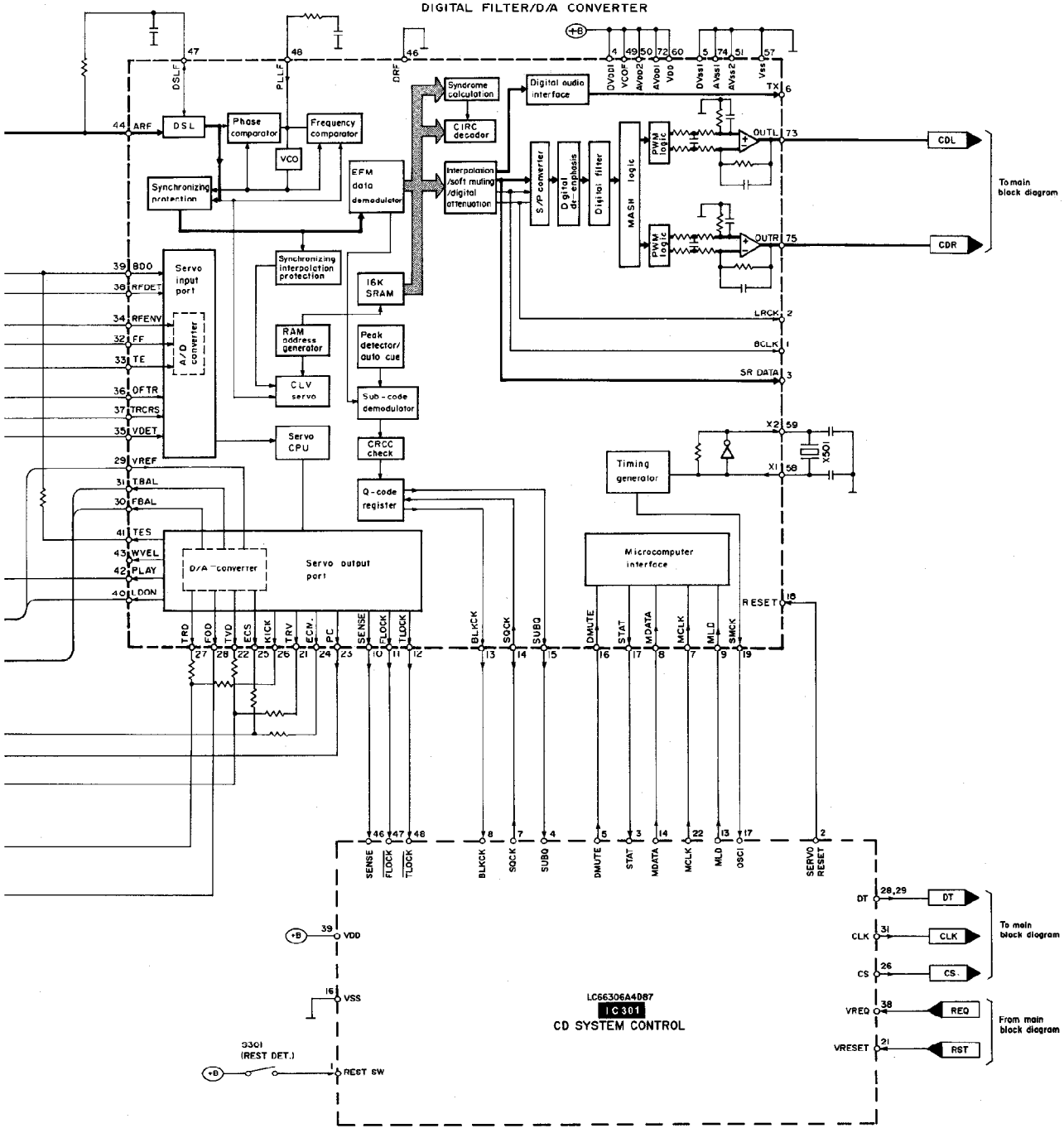
## • CD Player section



MN662740RE

IC501

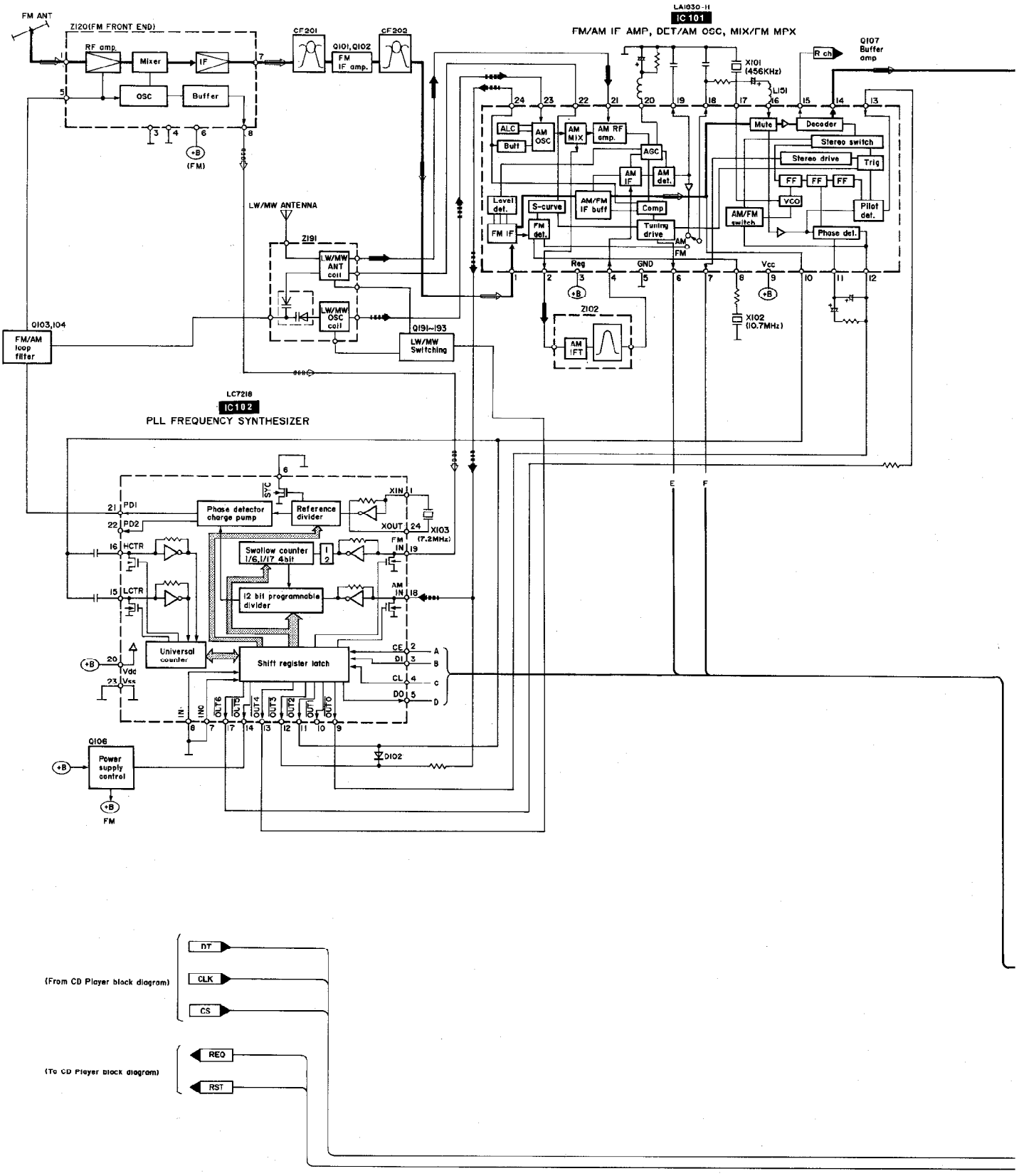
SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER/D/A CONVERTER

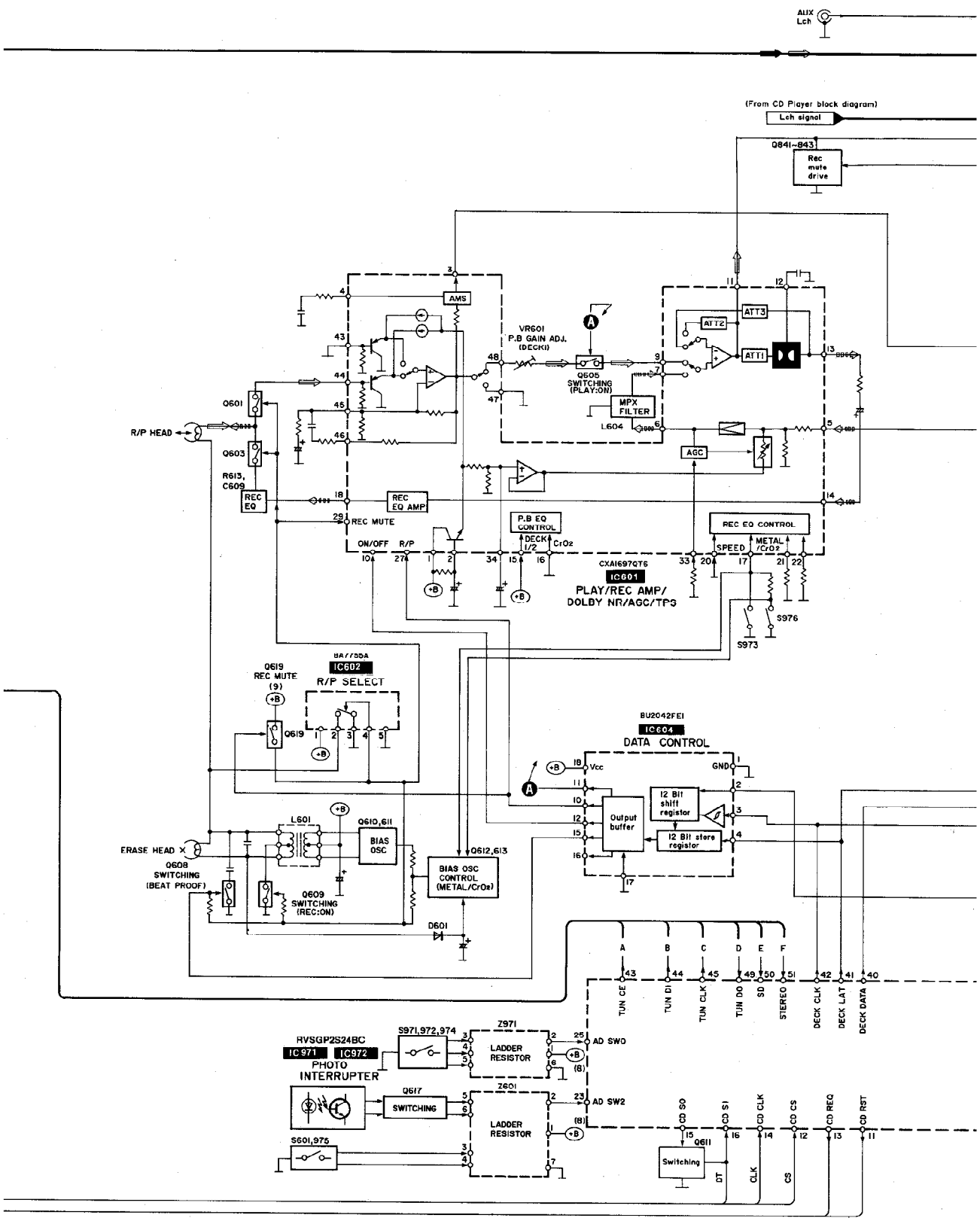


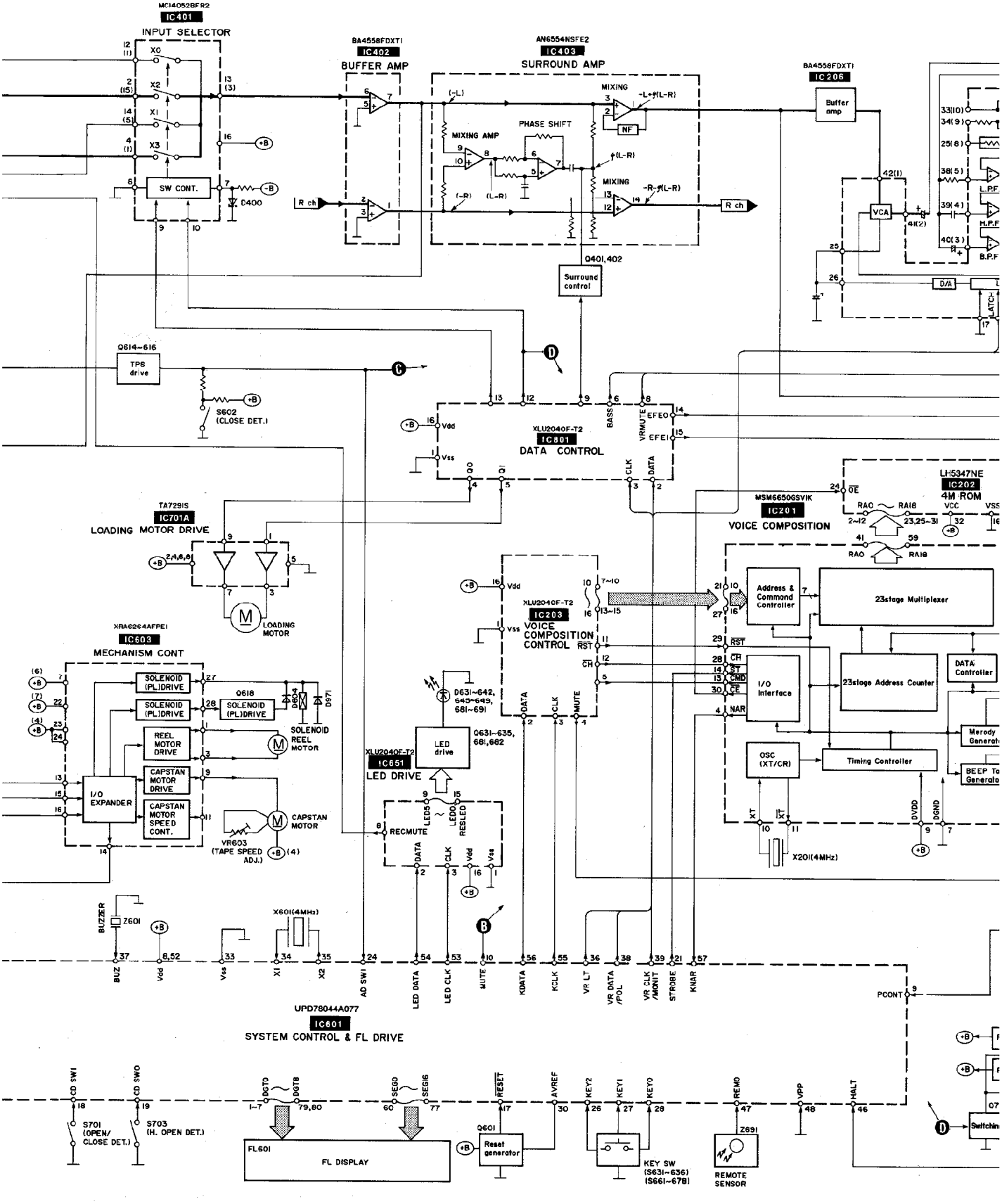

**Note:**

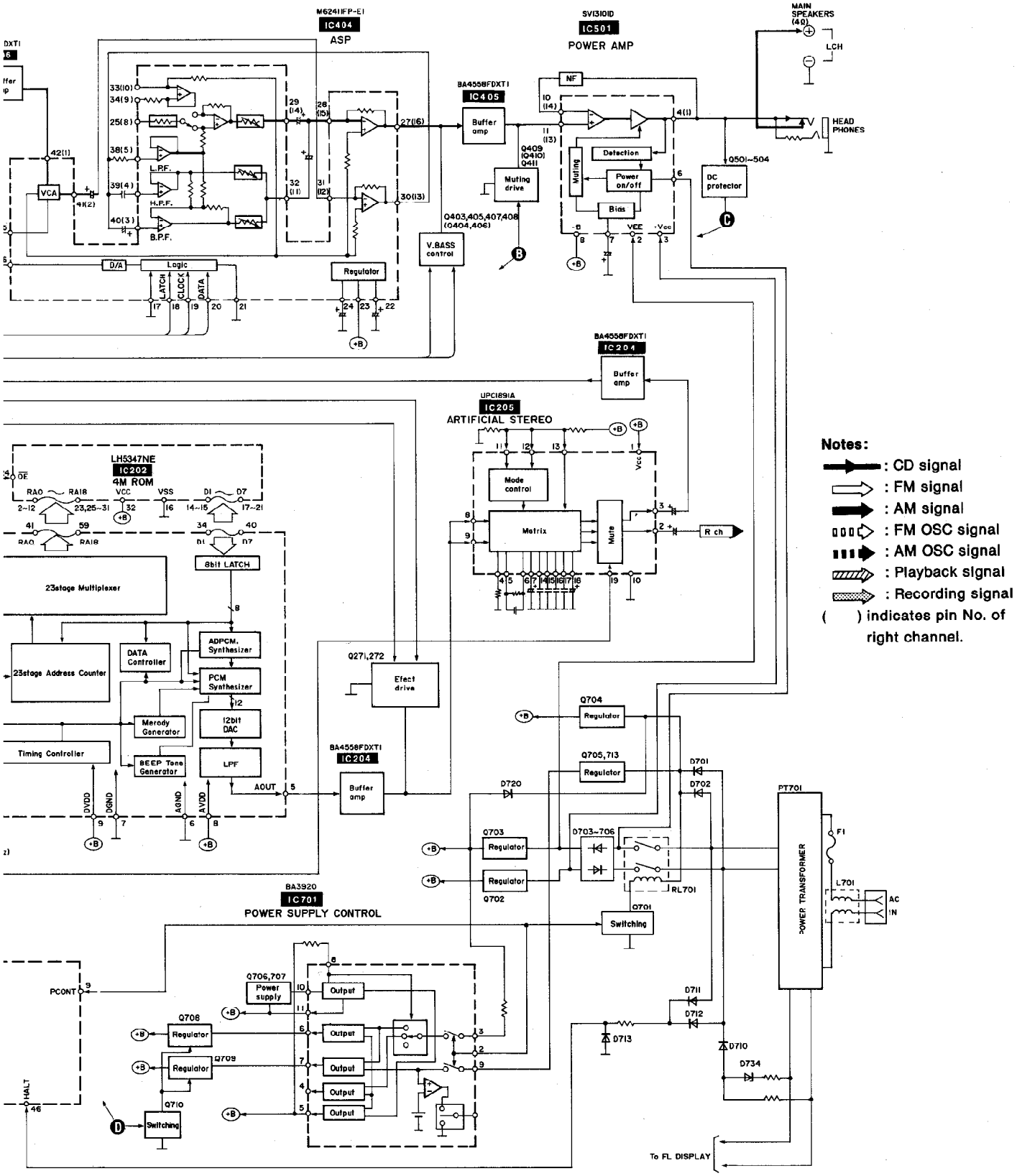
: CD signal

## • Tuner/Amplifier/Cassette deck section




AUX Lch
(From CD Player block diagram)
Lch signal
Q841~843
Rec mute drive
AMS
VR601 P.B GAIN ADJ. (DECK1)
Q605 SWITCHING (PLAY:ON)
MPX FILTER
L604
ATT3
ATT2
ATT1
AGC
Q601
R/P HEAD
Q603
R613, C609
REC EQ
REC EQ AMP
REC MUTE
P.B EQ CONTROL
DECK 1/2
CrO2
REC EQ CONTROL
SPEED
METAL /CrO2
ON/OFF
R/P
CXA1697QTS
IC601
PLAY/REC AMP/ DOLBY NR/AGC/TPS
S976
S973
Q619 REC MUTE (9)
IC602
R/P SELECT
BU2042FEI
IC604
DATA CONTROL
Vcc
GND
Output buffer
12 Bit shift register
12 Bit store register
L601
Q610,611
BIAS OSC
ERASE HEAD
Q608 SWITCHING (BEAT PROOF)
Q609 SWITCHING (REC:ON)
Q612,613
BIAS OSC CONTROL (METAL/CrO2)
D601
TUN CE
TUN DI
TUN CLK
TUN DO
SD
STEREO
DECK CLK
DECK LAT
DECK DATA
RVSGP2S24BC
IC971
IC972
PHOTO INTERRUPTER
S971,972,974
Z971
LADDER RESISTOR
AD SW0
Q617
SWITCHING
Z601
LADDER RESISTOR
AD SW2
S601,975
CD SO
CD SI
CD CLK
CD CS
CD REQ
CD RST
Q611
Switching
DT
CLK
CS


IC401
INPUT SELECTOR
SW CONT.
D400
IC402
BUFFER AMP
IC403
SURROUND AMP
MIXING AMP
PHASE SHIFT
MIXING
NF
R ch
Q401,402
Surround control
IC206
Buffer amp
VCA
D/A
L.P.F
M.P.F
B.P.F
Q614~616
TPS drive
S602 (CLOSE DET.)
IC801
DATA CONTROL
IC701A
LOADING MOTOR DRIVE
LOADING MOTOR
IC603
MECHANISM CONT
SOLENOID (PL)DRIVE
REEL MOTOR DRIVE
CAPSTAN MOTOR DRIVE
CAPSTAN MOTOR SPEED CONT.
I/O EXPANDER
SOLENOID REEL MOTOR
CAPSTAN MOTOR
VR603 (TAPE SPEED ADJ.)
IC651
LED DRIVE
D631~642, 649~649, 681~691
Q631~635, 681,682
RECMUTE
IC203
VOICE COMPOSITION CONTROL
IC201
VOICE COMPOSITION
Address & Command Controller
23stage Multiplexer
23stage Address Counter
DATA Controller
I/O Interface
OSC (XT/CR)
Timing Controller
IC202
4M ROM
X201(4MHz)
X601(4MHz)
Z601
BUZZER
IC601
SYSTEM CONTROL & FL DRIVE
S701 (OPEN/ CLOSE DET.)
S703 (H. OPEN DET.)
FL601
FL DISPLAY
Q601
Reset generator
KEY SW (S631~636) (S661~678)
Z691
REMOTE SENSOR
BUZ
Vdd
Vss
X1
X2
AD SW1
LED DATA
LED CLK
MUTE
KDATA
KCLK
VR LT
VR DATA /POL
VR CLK /MONIT
STROBE
KNAR
PCONT
CD SW1
CD SW0
DGTB
SEGB
RESET
AVREF
KEY2
KEY1
KEY0
REMO
VPP
HALT




**Notes:**

- : CD signal
- : FM signal
- : AM signal
- : FM OSC signal
- : AM OSC signal
- : Playback signal
- : Recording signal

( ) indicates pin No. of right channel.

# ■ SCHEMATIC DIAGRAM

**(Parts list on pages 94~97, 103~107.)**

(This schematic diagram may be modified at any time with development of new technology.)

**Notes:**

- **S301** : Reset det. switch
- **S601** : DECK OPEN det. switch.
- **S602** : DECK CLOSE det. switch.
- **S631** : TAPE/PLAY switch.
- **S632** : CD/PLAY (▶) switch.
- **S633** : TUNER/BAND switch.
- **S634** : STOP (■)/MODE/SET switch.
- **S635** : REV (◀◀)/B. SKIP, SEARCH (|◀◀/◀◀)/DOWN (▼) switch.
- **S636** : FWD (▶▶)/F. SKIP, SEARCH (▶▶/▶▶|)/UP (▲) switch.
- **S661** : Power "STANDBY ⏻ /ON" (POWER, STANDBY ⏻ /ON) switch.
- **S662** : Control panel open/close (CONTROL ▲ OPEN/CLOSE) switch.
- **S663** : Soundscape effect adjust (EFFECT) switch.
- **S664** : Soundscape select (SOUNDSCAPE) switch.
- **S665** : Clock/timer set (CLOCK/TIMER) switch.
- **S666** : Timer recording/playback ( REC/PLAY) switch.
- **S667** : Volume up (VOLUME +) switch.
- **S668** : Volume down (VOLUME −) switch.
- **S669** : Front panel open/close (CD ▲ OPEN/CLOSE) switch.
- **S670** : Cassette holder open/close (TAPE ▲ OPEN/CLOSE) switch.
- **S671** : Sound menu select/beep OFF ON (SOUND MENU) switch.
- **S672** : V. bass select (V. BASS) switch.
- **S673** : Memory (MEMORY) switch.
- **S674** : Dolby noise reduction (DOLBY NR) switch.
- **S675** : Tape direction select (DIRECTION) switch.
- **S676** : Record (● REC) switch.
- **S677** : CD edit-recording (EDIT) switches.
- **S678** : Auxiliary input (AUX) switch.
- **S701** : Open/Close det. switch
- **S702** : Laser ON/OFF switch
- **S703** : Half Open det. switch
- **S971** : Mode switch.
- **S972** : HALF switch.
- **S973** : ATS/$CrO_2$ tape switch.
- **S974** : Rewind recorde inhibit switch.
- **S975** : Forward recorde inhibit switch.
- **S976** : ATS/METAL det. switch.

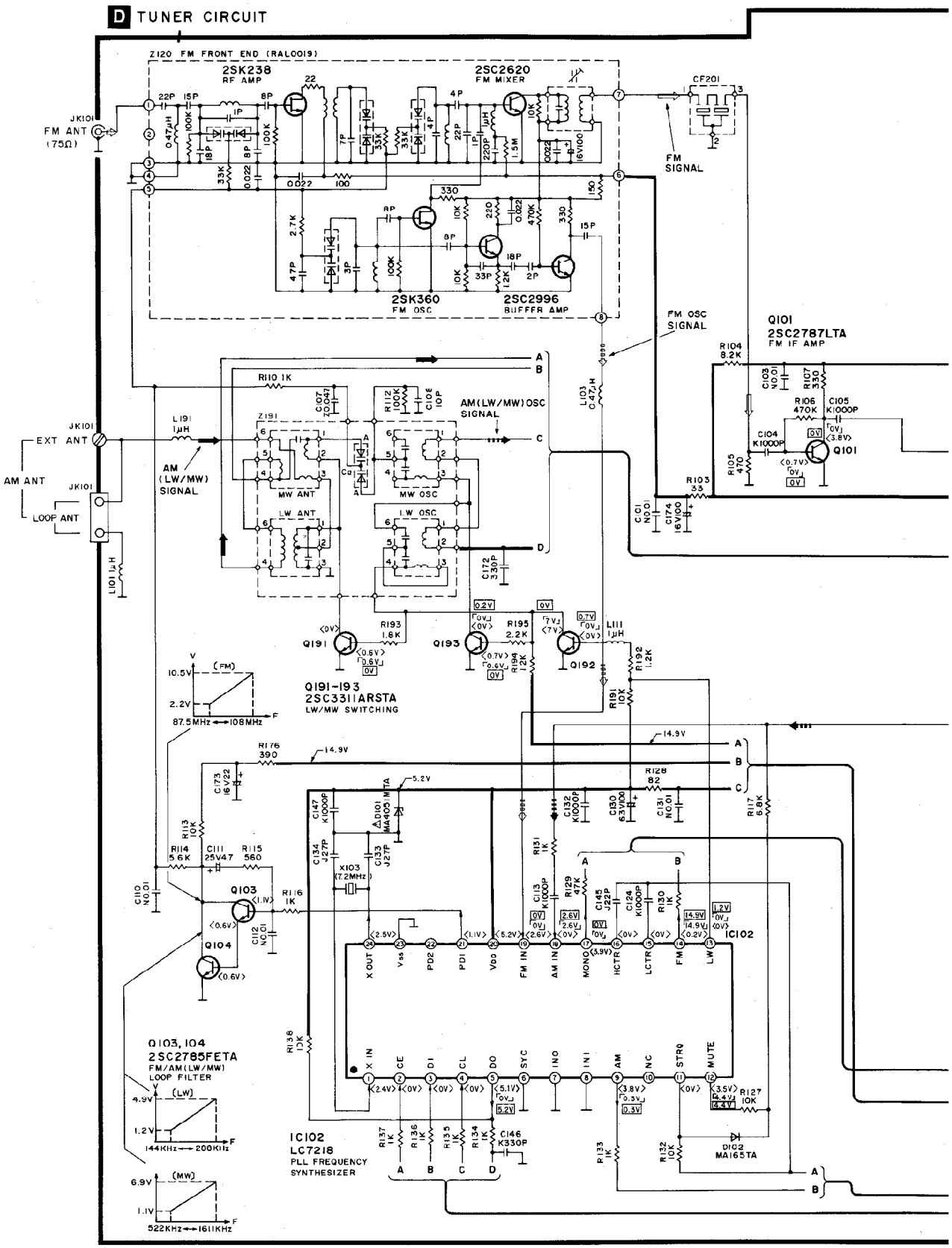
- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
  〈Compact disc player section〉
  No mark: STOP
  ( ): Playback (Test disc 1kHz, L+R 0dB)
  〈Tuner/Amplifier/Cassette deck section〉
  No mark: TUNER mode (No signal)
  〈 〉: FM
  ⌜ ⌟: MW
  ⌜ ⌟: TUNER mode
  [ ]: TAPE mode
  (( )): Playback
  《 》: Record
  ▭: LW
  〖 〗: AUX mode
- Signal line
  ▬▬: Positive voltage lines
  ⇨: FM signal
  ▯▯▯⇨: FM OSC
  ⇨: Recording signal
  ▬ ▬ ▬: Negative voltage lines
  ➡: AM (MW/LW) signal
  ▮▮▮➡: AM (MW/LW) OSC
  ⇨: Playback signal
  ⇨: CD signal
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- The supply parts number is described alone in the replacement parts.

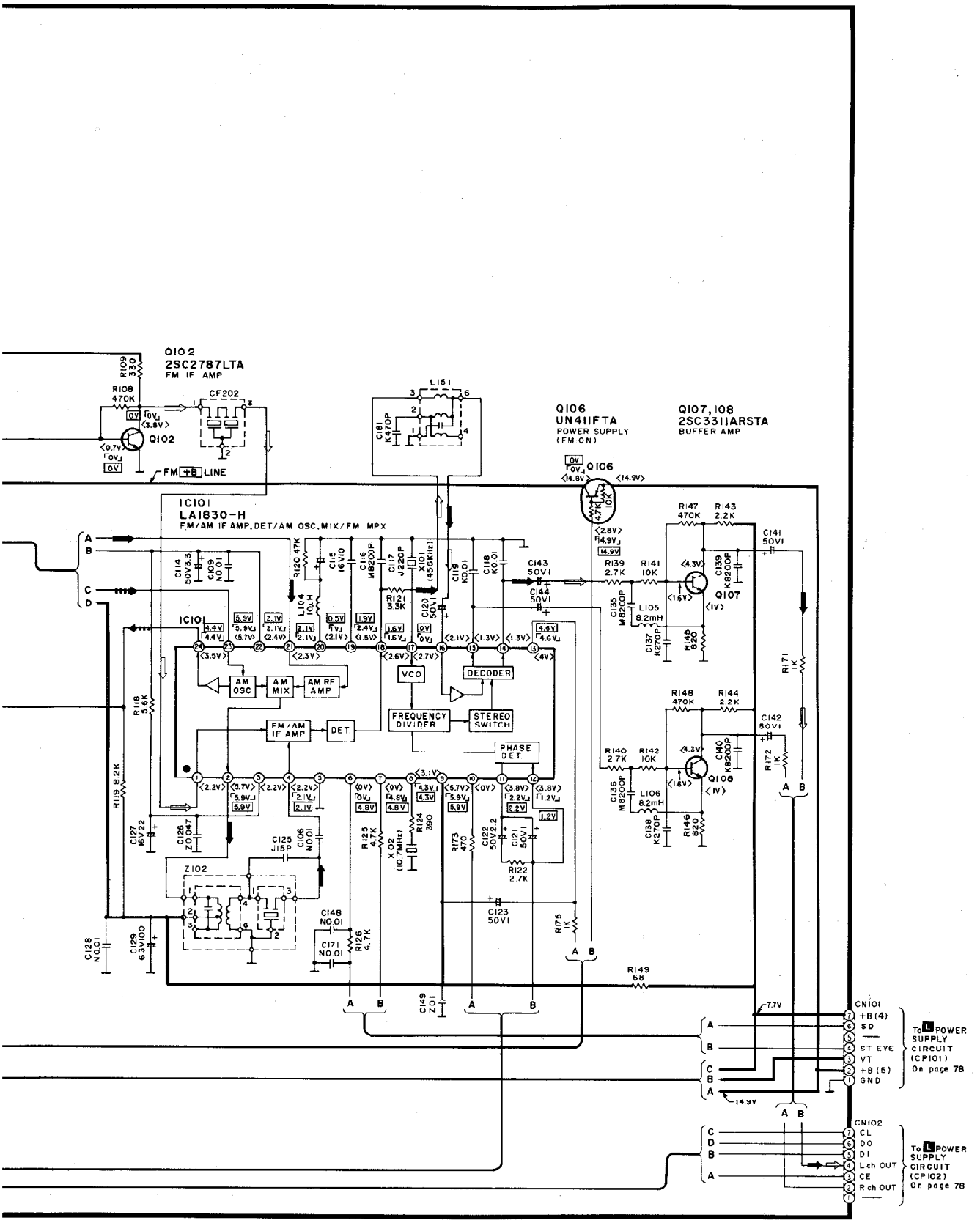
| Part No. | Original Part No. | Supply Part No. |
|---|---|---|
| IC202 | LH5347NE | LH5347N4 |
| IC203, 651, 801 | XLU2040F-T2 | XLU2040F-T1 |

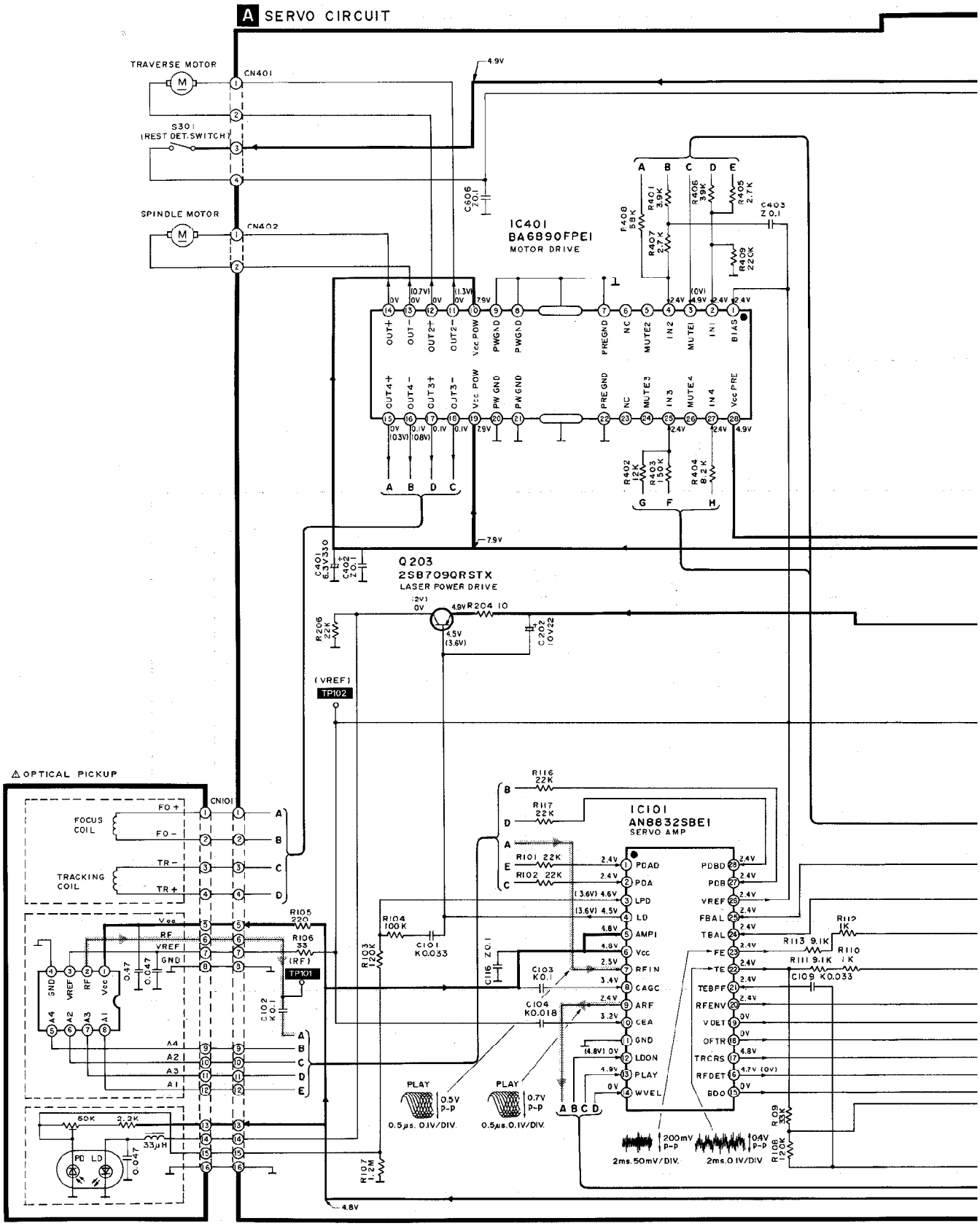
**Caution!**

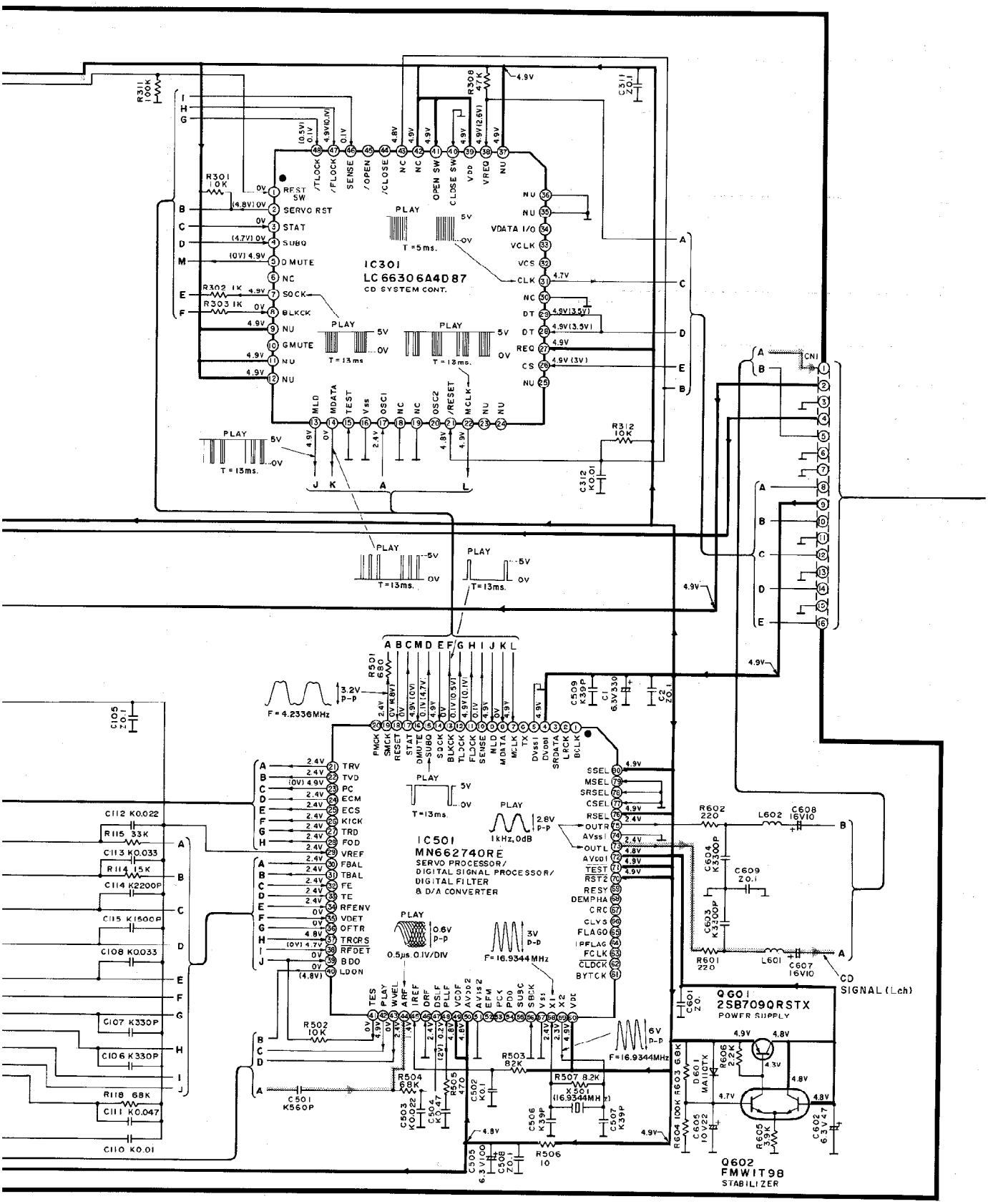
IC and LSI are sensitive to static ellectricity.
Secondary trouble can be prevented by taking care during repair.

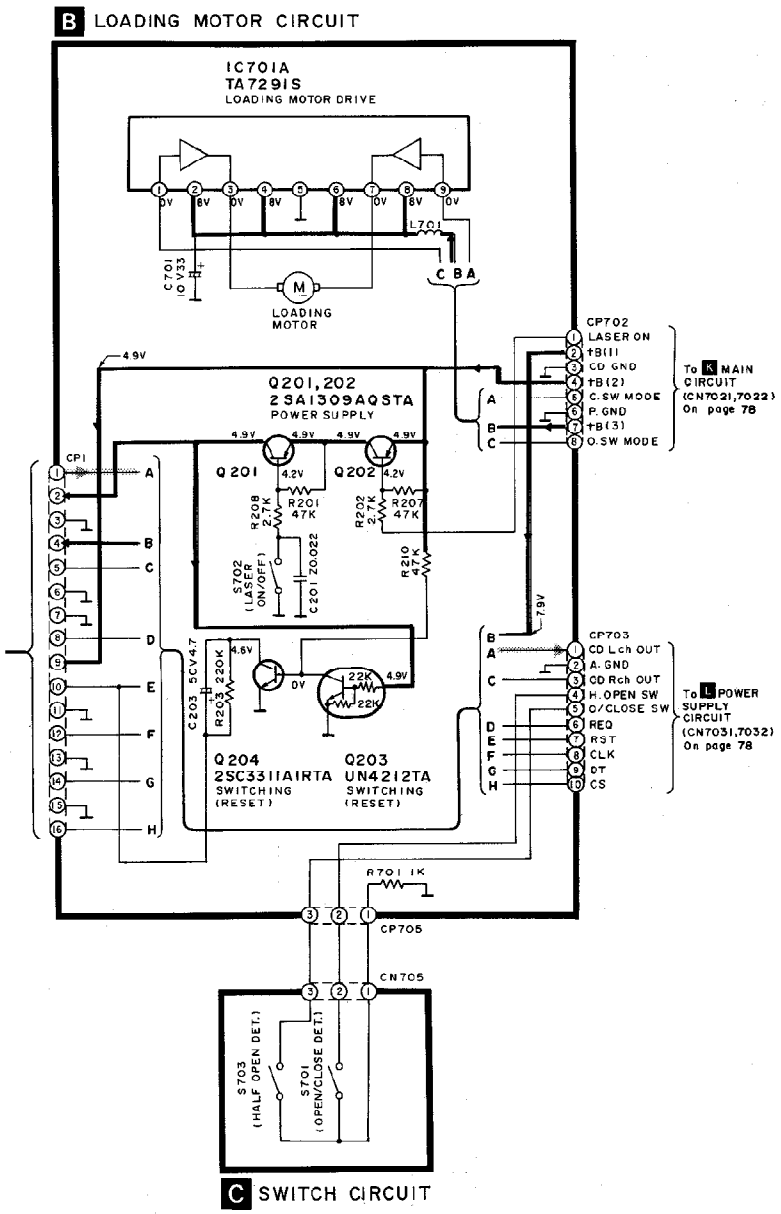
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

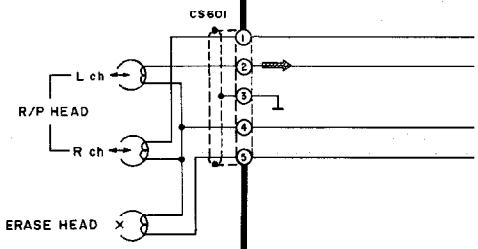

D TUNER CIRCUIT
Z120 FM FRONT END (RALOO19)
2SK238
RF AMP
2SC2620
FM MIXER
2SK360
FM OSC
2SC2996
BUFFER AMP
JK101
FM ANT (75Ω)
FM SIGNAL
CF201
FM OSC SIGNAL
Q101
2SC2787LTA
FM IF AMP
AM (LW/MW) OSC SIGNAL
JK101
EXT ANT
AM ANT
JK101
LOOP ANT
L191 1μH
AM (LW/MW) SIGNAL
L101 1μH
MW ANT
MW OSC
LW ANT
LW OSC
Z191
Q191
Q193
Q192
Q191-193
2SC3311ARSTA
LW/MW SWITCHING
V
10.5V
2.2V
(FM)
87.5MHz ↔ 108MHz
F
R176 390
14.9V
5.2V
R128 82
D101 MA4005 MTA
X103 (7.2MHz)
Q103
Q104
R116 1K
C111 25V47
R114 5.6K
R115 560
C110 NO.01
C112 NO.01
R113 10K
C173 16V22
C147 K1000P
C134 J27P
C133 J27P
C132 K1000P
C130 6.3V100
C131 NO.01
R117 6.8K
R131 1K
C113 K1000P
R129 47K
C145 J22P
C124 K1000P
R130 1K
IC102
X OUT
Vss
PDO
PDI
Vdd
FM IN
AM IN
MONO
HCTR
LCTR
FM
LW
R136 10K
X IN
CE
DI
CL
DO
SYC
INO
INI
AM
NC
STRO
MUTE
R127 10K
DIO2 MA165TA
R137 1K
R136 1K
R135 1K
R134 1K
C146 K330P
R133 1K
R132 10K
A
B
C
D
IC102
LC7218
PLL FREQUENCY SYNTHESIZER
Q103, 104
2SC2785FETA
FM/AM(LW/MW)
LOOP FILTER
4.9V
1.2V
(LW)
144KHz ↔ 288KHz
6.9V
1.1V
(MW)
522KHz ↔ 1611KHz
R104 8.2K
C103 NO.01
R107 330
R106 470K
C105 K1000P
C104 K1000P
R105 470
R103 33
C101 NO.01
C174 16V100
C172 330P
R193 1.8K
R195 2.2K
R194 1.2K
R192 1.2K
R191 10K
L111 1μH
L103 0.47μH

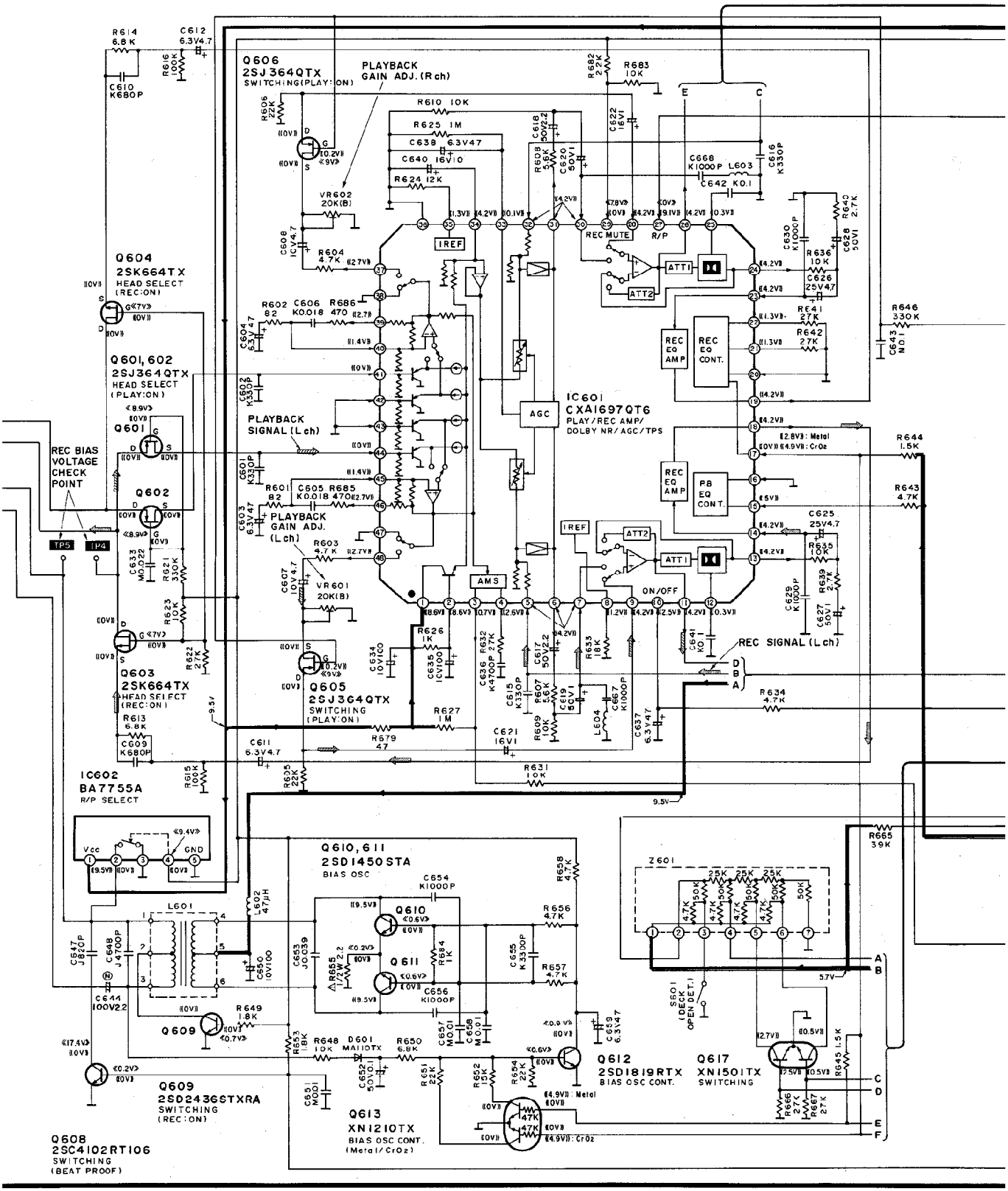

Q102
2SC2787LTA
FM IF AMP
Q106
UN411FTA
POWER SUPPLY
(FM ON)
Q107, 108
2SC3311ARSTA
BUFFER AMP
IC101
LA1830-H
FM/AM IF AMP, DET/AM OSC, MIX/FM MPX
FM +B LINE
AM OSC
AM MIX
AM RF AMP
FM/AM IF AMP
DET
VCO
DECODER
FREQUENCY DIVIDER
STEREO SWITCH
PHASE DET.
CN101
CN102
To POWER SUPPLY CIRCUIT (CP101) On page 78
To POWER SUPPLY CIRCUIT (CP102) On page 78


A SERVO CIRCUIT
TRAVERSE MOTOR
CN401
S301
(REST DET.SWITCH)
SPINDLE MOTOR
CN402
IC401
BA6890FPEI
MOTOR DRIVE
OUT1+
OUT1-
OUT2+
OUT2-
Vcc POW
PWGND
PWGND
PREGND
NC
MUTE2
IN2
MUTE1
IN1
BIAS
OUT4+
OUT4-
OUT3+
OUT3-
Vcc POW
PW GND
PWGND
PREGND
NC
MUTE3
IN3
MUTE4
IN4
Vcc PRE
Q203
2SB709QRSTX
LASER POWER DRIVE
(VREF)
TP102
OPTICAL PICKUP
CN101
FOCUS COIL
FO+
FO-
TRACKING COIL
TR-
TR+
Vcc
RF
VREF
GND
(RF)
TP101
A4
A2
A3
A1
PD
LD
IC101
AN8832SBE1
SERVO AMP
PDAD
PDA
LPD
LD
AMPI
Vcc
RFIN
CAGC
ARF
CEA
GND
LDON
PLAY
WVEL
PDBD
PDB
VREF
FBAL
TBAL
FE
TE
TEBFF
RFENV
VDET
OFTR
TRCRS
RFDET
BDO
PLAY
0.5V P-P
0.5μs. 0.1V/DIV.
PLAY
0.7V P-P
0.5μs.0.1V/DIV.
200mV P-P
2ms.50mV/DIV.
0.4V P-P
2ms.0.1V/DIV.
4.9V
7.9V
4.8V

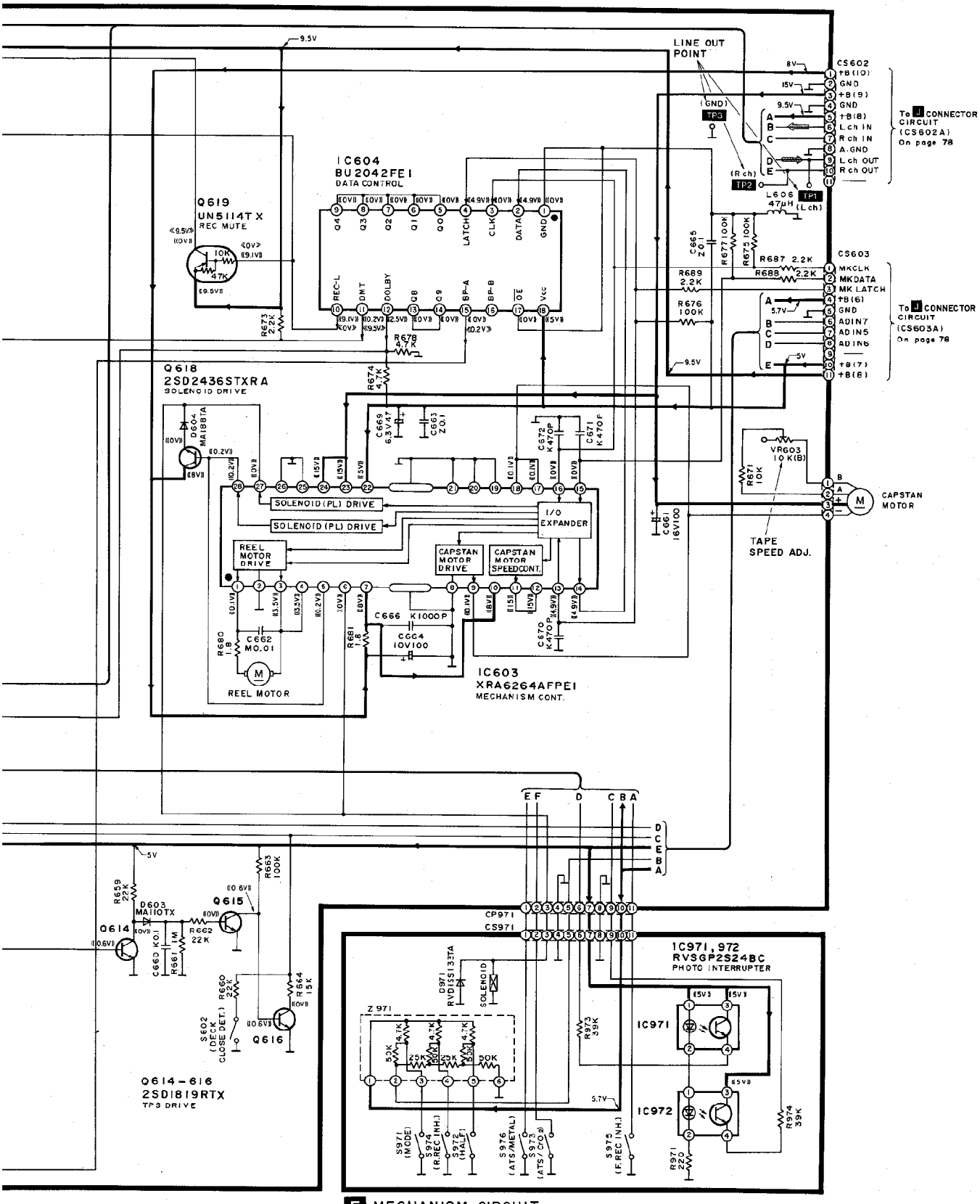

IC301
LC66306A4D87
CD SYSTEM CONT.
IC501
MN662740RE
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER
& D/A CONVERTER
Q601
2SB709QRSTX
POWER SUPPLY
Q602
FMWIT98
STABILIZER
CD
SIGNAL (Lch)
PLAY
T=13ms.
T=5ms.
F=4.2336MHz
F=16.9344MHz
1kHz,0dB


B LOADING MOTOR CIRCUIT
IC701A
TA7291S
LOADING MOTOR DRIVE
L701
C701 10V33
LOADING MOTOR
CBA
CP702
LASER ON
+B(1)
CD GND
+B(2)
C.SW MODE
P.GND
+B(3)
O.SW MODE
To K MAIN CIRCUIT (CN7021,7022) On page 78
4.9V
Q201,202
2SA1309AQSTA
POWER SUPPLY
Q201
Q202
4.2V
R208 2.7K
R201 47K
R202 2.7K
R207 47K
S702 (LASER ON/OFF)
C201 0.022
R210 47K
7.9V
CP1
CP703
CD Lch OUT
A.GND
CD Rch OUT
H.OPEN SW
O/CLOSE SW
REQ
RST
CLK
DT
CS
To L POWER SUPPLY CIRCUIT (CN7031,7032) On page 78
C203 SCV4.7
R203 220K
4.6V
0V
22K
22K
4.9V
Q204
2SC3311AIRTA
SWITCHING (RESET)
Q203
UN4212TA
SWITCHING (RESET)
R701 1K
CP705
CN705
S703 (HALF OPEN DET.)
S701 (OPEN/CLOSE DET.)
C SWITCH CIRCUIT


CS601
L ch
R/P HEAD
R ch
ERASE HEAD
1
2
3
4
5


Q606
2SJ364QTX
SWITCHING(PLAY:ON)
PLAYBACK GAIN ADJ.(Rch)
Q604
2SK664TX
HEAD SELECT (REC:ON)
Q601,602
2SJ364QTX
HEAD SELECT (PLAY:ON)
Q601
Q602
REC BIAS VOLTAGE CHECK POINT
TP5
TP4
PLAYBACK SIGNAL (Lch)
PLAYBACK GAIN ADJ. (Lch)
Q603
2SK664TX
HEAD SELECT (REC:ON)
Q605
2SJ364QTX
SWITCHING (PLAY:ON)
IC601
CXA1697QT6
PLAY/REC AMP/ DOLBY NR/AGC/TPS
REC SIGNAL (Lch)
IC602
BA7755A
R/P SELECT
Q610,611
2SD1450STA
BIAS OSC
Q609
2SD2436STXRA
SWITCHING (REC:ON)
Q608
2SC4102RT106
SWITCHING (BEAT PROOF)
Q613
XN1210TX
BIAS OSC CONT. (Metal/CrO2)
Q612
2SD1819RTX
BIAS OSC CONT.
Q617
XN1501TX
SWITCHING
Z601
S601 (DECK 1 OPEN DET.)
REC MUTE
R/P
ATT1
ATT2
IREF
AGC
AMS
ON/OFF
REC EQ AMP
REC EQ CONT.
PB EQ CONT.
9.5V
5.7V

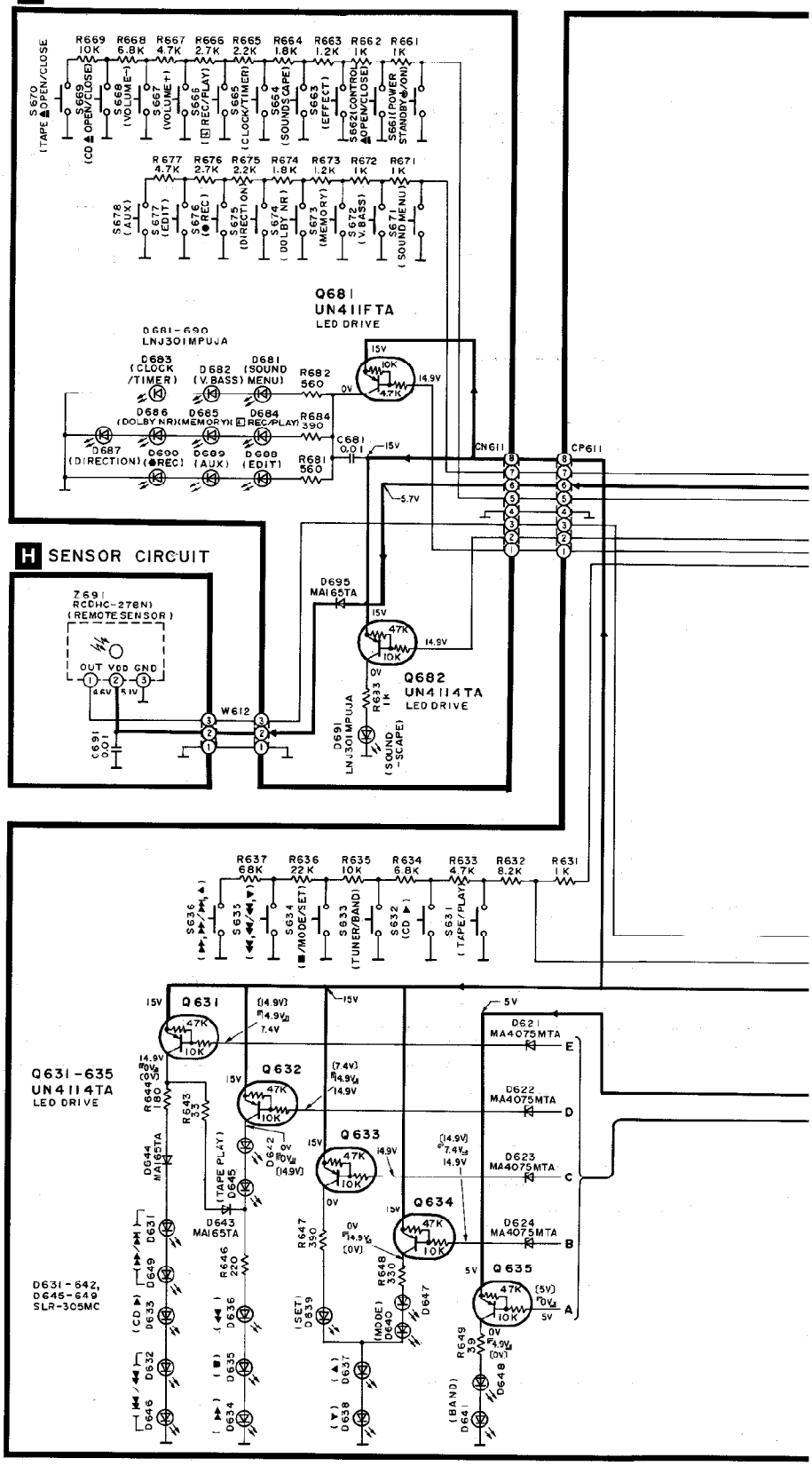
## E MECHANISM CONTROL CIRCUIT



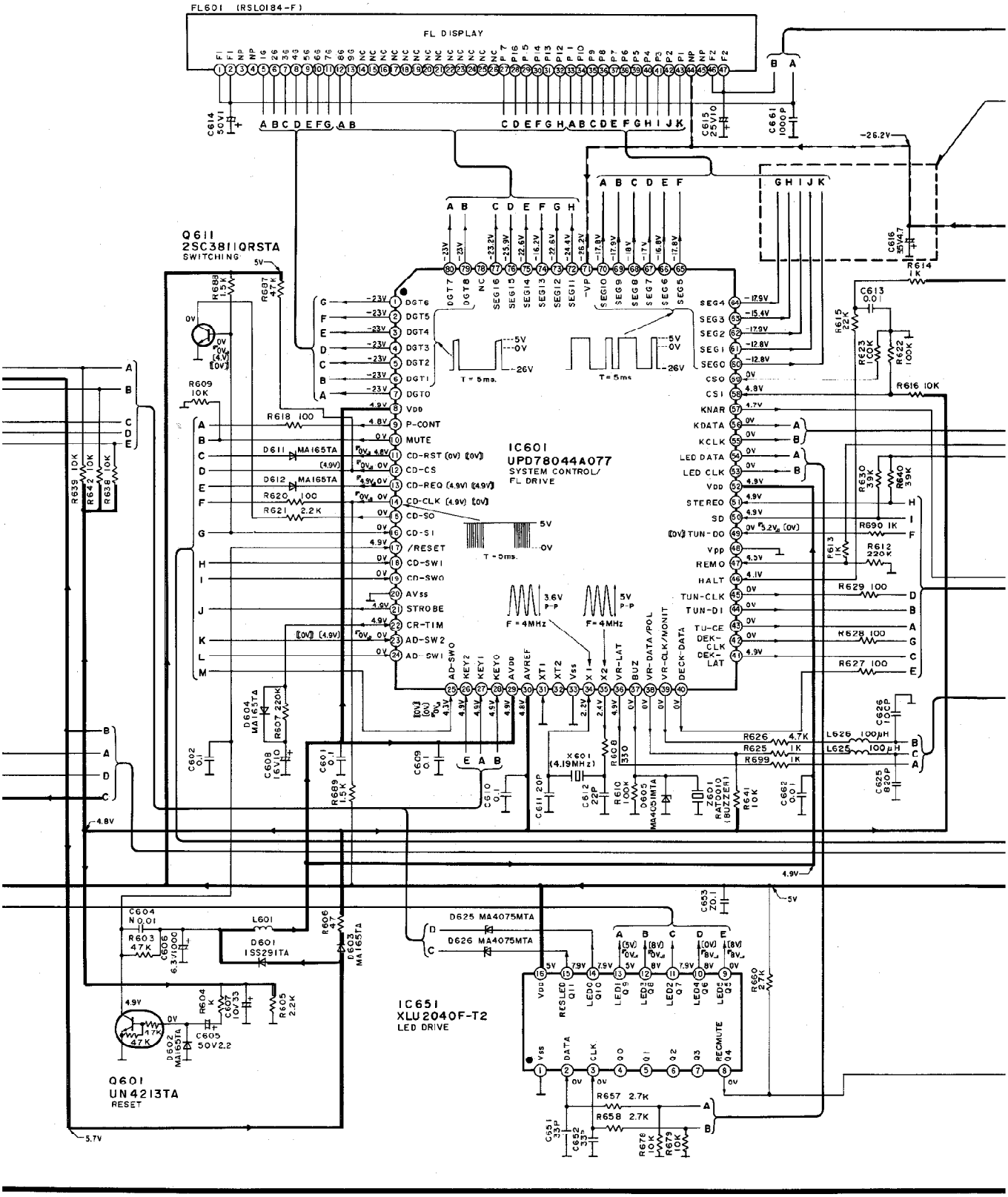

## F MECHANISM CIRCUIT

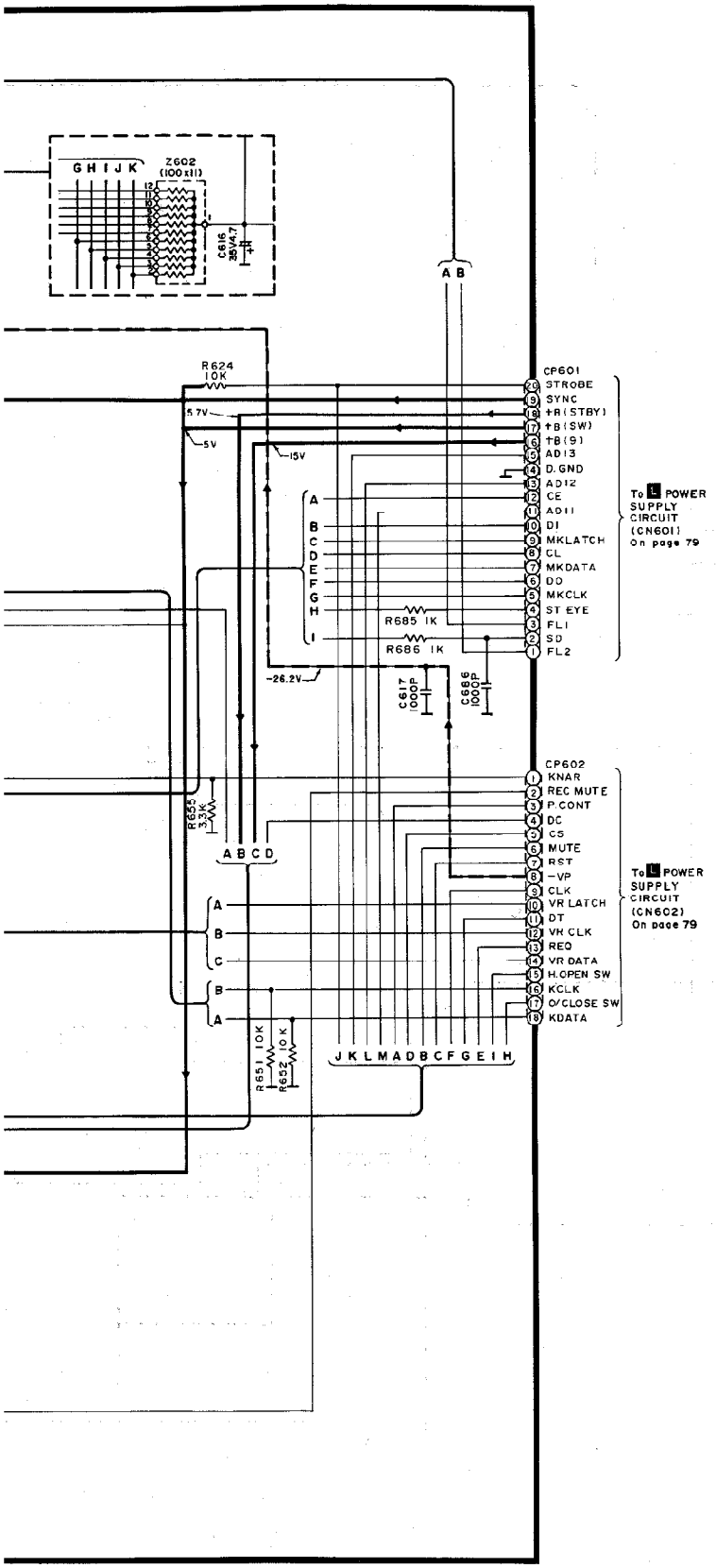
**I** FL CIRCUIT

**G** OPERATION CIRCUIT



## I FL CIRCUIT


FL601 (RSL0184-F)
FL DISPLAY
Q611
2SC3811QRSTA
SWITCHING
IC601
UPD78044A077
SYSTEM CONTROL/
FL DRIVE
IC651
XLU2040F-T2
LED DRIVE
Q601
UN4213TA
RESET
X601
(4.19MHz)
F=4MHz
T=5ms.
DGT6
DGT5
DGT4
DGT3
DGT2
DGT1
DGT0
VDD
P-CONT
MUTE
CD-RST (0V) [0V]
CD-CS
CD-REQ (4.9V) [4.9V]
CD-CLK (4.9V) [0V]
CD-SO
CD-SI
/RESET
CD-SWI
CD-SWO
AVss
STROBE
CR-TIM
AD-SW2
AD-SW1
KDATA
KCLK
LED DATA
LED CLK
STEREO
SD
TUN-DO
Vpp
REMO
HALT
TUN-CLK
TUN-DI
TU-CE
DEK-CLK
DEK-LAT
R614 1K
R616 10K
R618 100
R620 100
R621 2.2K
R629 100
R628 100
R627 100
R626 4.7K
R625 1K
R699 1K
R690 1K
R612 220K
R613 1K
R630 39K
R640 39K
R609 10K
R635 10K
R642 10K
R638 10K
R688 1.5K
R687 47K
R689 1.5K
R607 220K
R608 330
R610 100K
R611 10K
R660 2.7K
R657 2.7K
R658 2.7K
R676 10K
R679 10K
R603 47K
R604 K
R605 2.2K
C601 0.1
C602 0.1
C603 10V33
C604 N0.01
C605 50V2.2
C606 6.3V1000
C608 16V10
C609 0.1
C610 0.1
C611 20P
C612 22P
C613 0.01
C615 25V10
C616 35V4.7
C625 820P
C626 10CP
C651 33P
C652 33P
C653 20.1
C661 1000P
C662 0.01
L601
L625 100μH
L626 100μH
D601 1SS291TA
D602 MA165TA
D603 MA165TA
D604 MA165TA
D611 MA165TA
D612 MA165TA
D625 MA4075MTA
D626 MA4075MTA
Z601 RATOMO (BUZZER)
-26.2V
5.7V



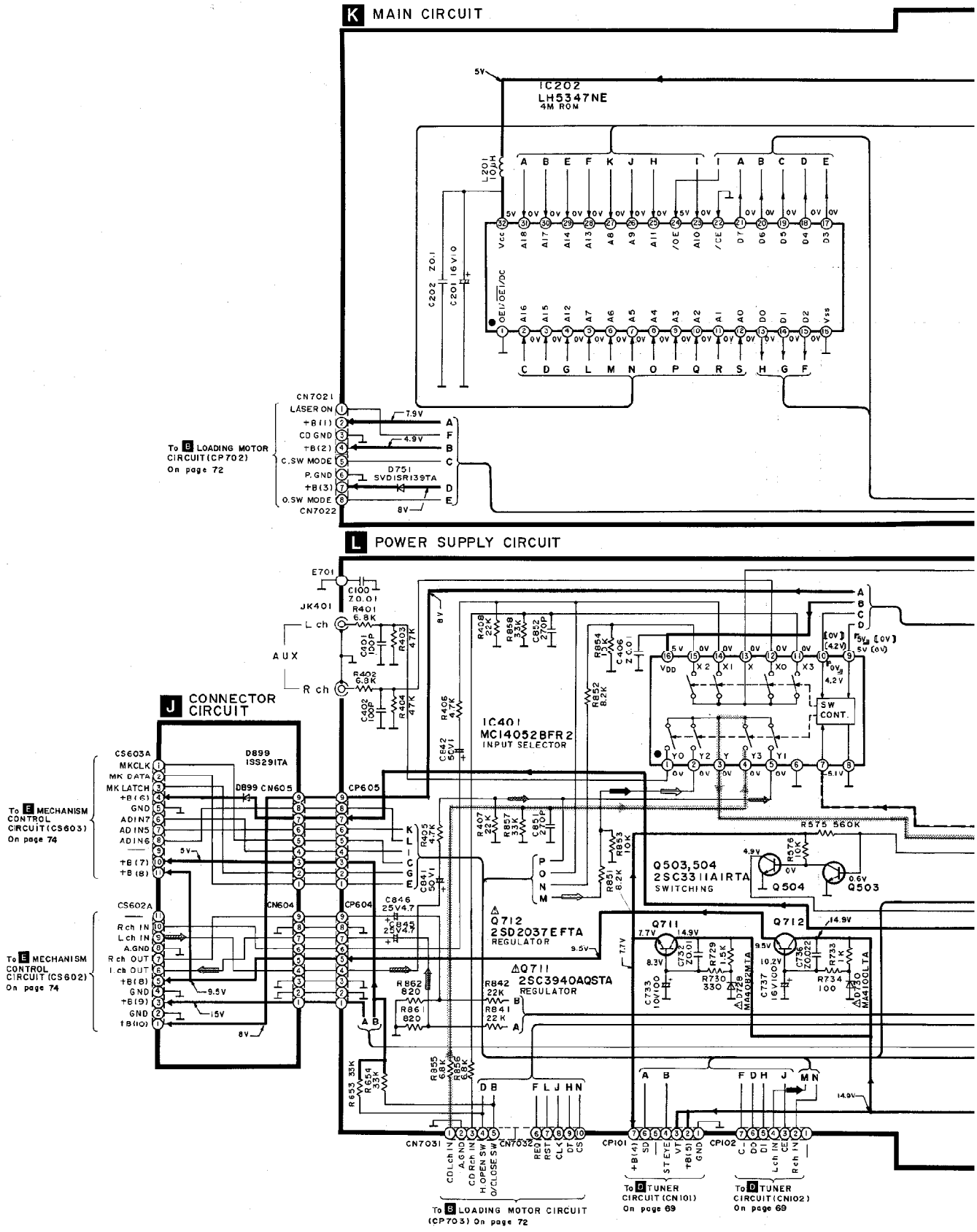

**Note:**

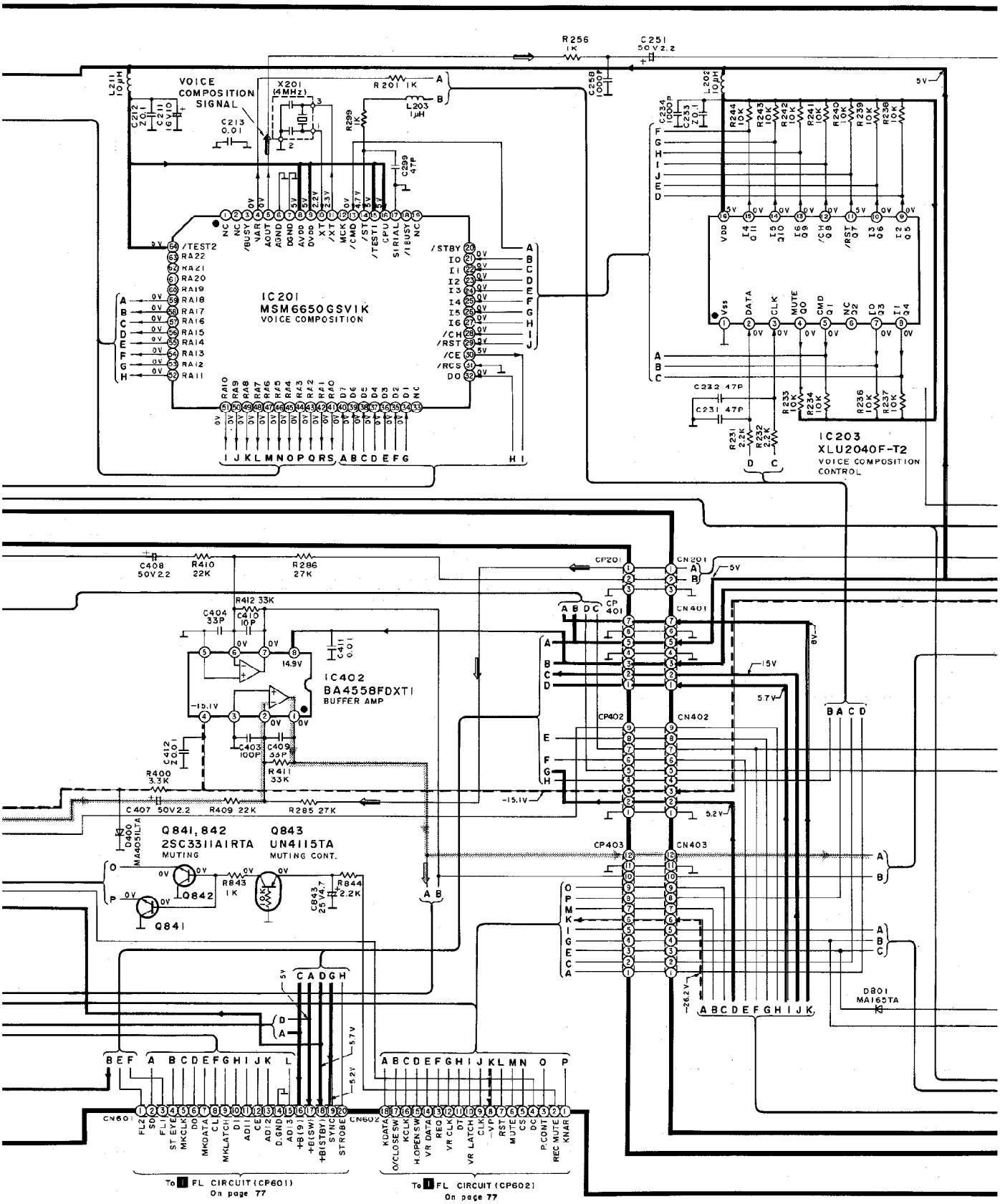
When replacing IC601

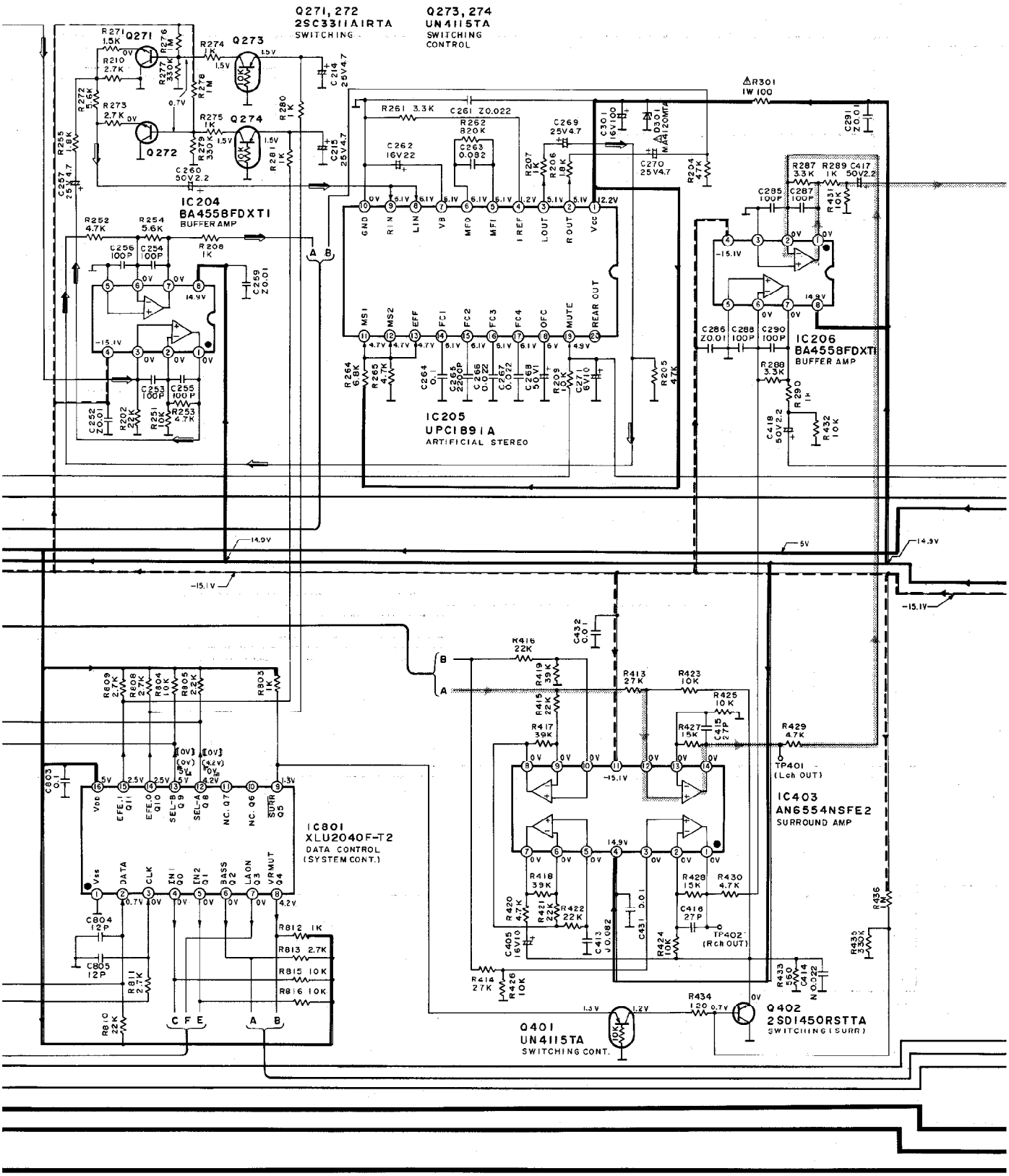
There are two different types of SA-LS10, with or without a resistance array on the PCB (see table).

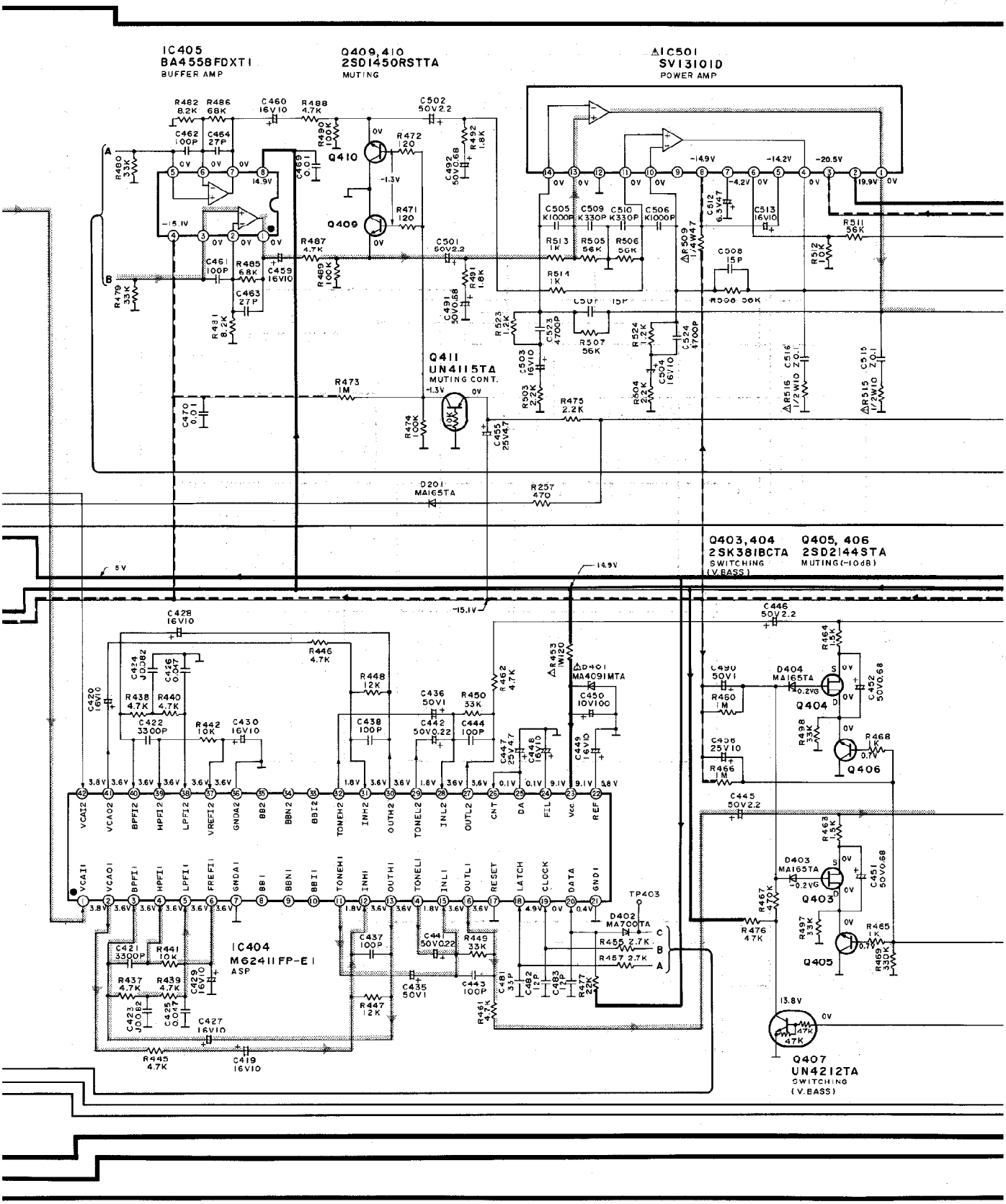
| | IC601 | Resistance array | Suffix |
|---|---|---|---|
| Type A | UPD78P044077 | Yes | C |
| Tyep B | UPD78044A077 | None | D |

For the type A unit, remove the resistance array on the PCB when replacing IC601 (UPD78P044077). For the type B unit, simply replace IC601 (UPD78044A077).

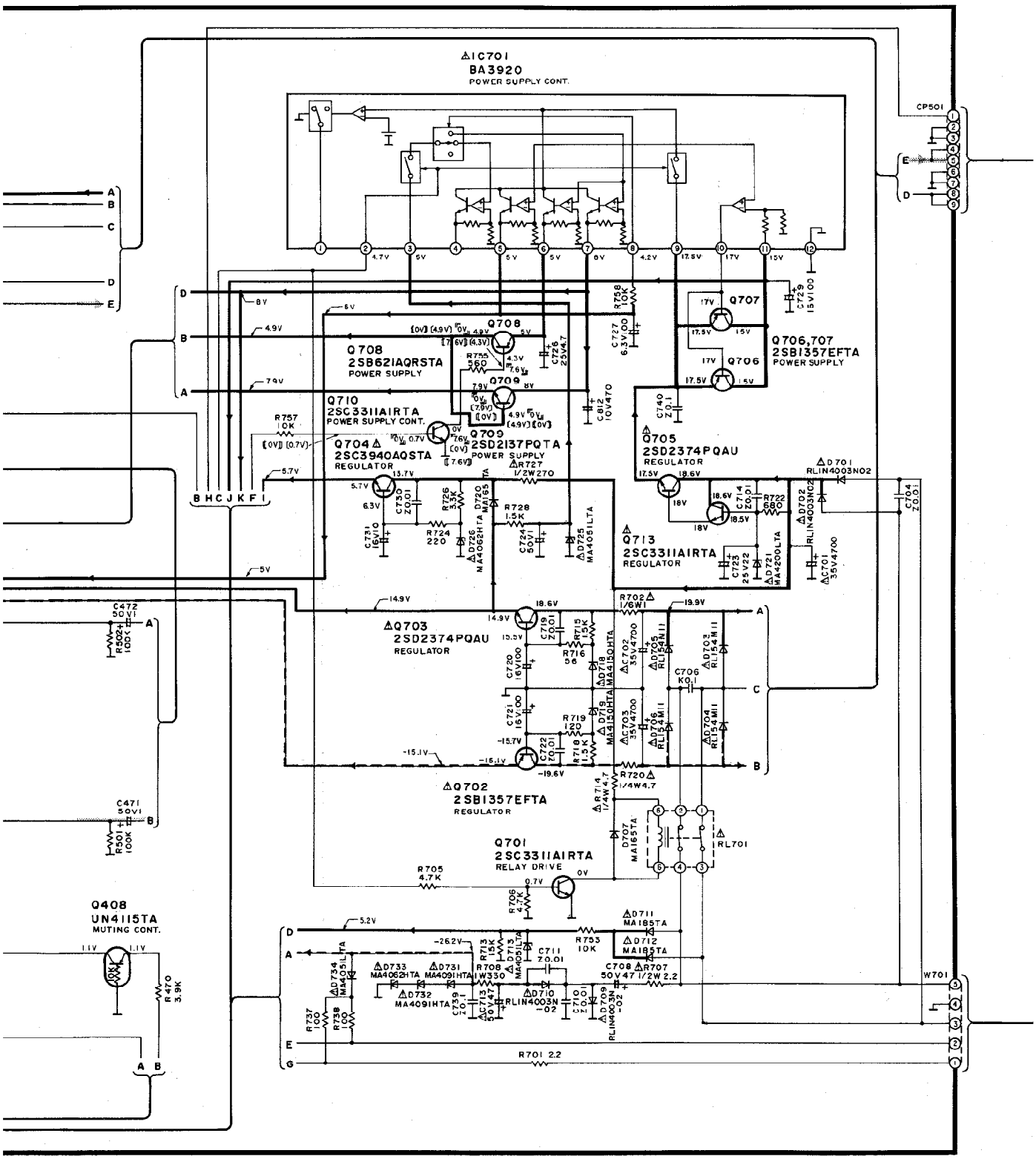

K MAIN CIRCUIT
IC202
LH5347NE
4M ROM
L201
10μH
C202 Z0.1
C201 16V10
CN7021
LASER ON
+B(1)
CD GND
+B(2)
C.SW MODE
P.GND
+B(3)
O.SW MODE
CN7022
7.9V
4.9V
D751
SVD1SR139TA
8V
To B LOADING MOTOR CIRCUIT(CP702) On page 72
L POWER SUPPLY CIRCUIT
E701
C100 Z0.01
JK401
AUX
L ch
R ch
R401 6.8K
R402 6.8K
C401 100P
C402 100P
R403 47K
R404 47K
J CONNECTOR CIRCUIT
CS603A
MKCLK
MK DATA
MK LATCH
+B(6)
GND
ADIN7
ADIN5
ADIN6
+B(7)
+B(8)
To E MECHANISM CONTROL CIRCUIT(CS603) On page 74
CS602A
Rch IN
Lch IN
A.GND
Rch OUT
Lch OUT
+B(8)
GND
+B(9)
GND
+B(10)
To E MECHANISM CONTROL CIRCUIT(CS602) On page 74
D899 1SS291TA
D899 CN605
CP605
CN604
CP604
9.5V
5V
8V
IC401
MC14052BFR2
INPUT SELECTOR
R408 22K
R858 33K
C852 270P
R854 10K
C406 Z0.01
R852 8.2K
C642 50V1
R406 4.7K
SW CONT.
R575 560K
Q503,504
2SC3311AIRTA
SWITCHING
Q504
Q503
R576 10K
Q712
2SD2037EFTA
REGULATOR
Q711
2SC3940AQSTA
REGULATOR
R405 4.7K
R407 22K
R857 33K
C851 270P
R853 10K
R851 8.2K
C841 50V1
C846 25V4.7
C845 25V4.7
R862 820
R861 820
R842 22K
R841 22K
Q711
Q712
C733 10V100
R730 330
C737 16V100
R729 1.5K
C730 Z0.01
C736 Z0022
R733 1K
R734 100
D728 MA4082MTA
D710 MA4100LTA
R355 6.8K
R356 6.8K
R633 33K
R634 33K
CN7031
CN7032
CD Lch IN
A.GND
CD Rch IN
H.OPEN SW
O/CLOSE SW
REQ
RST
CLK
DT
CS
CP101
CP102
+B(14)
SD
STEYE
VT
+B(15)
GND
C.
DO
DI
Lch IN
CE
Rch IN
To B LOADING MOTOR CIRCUIT (CP703) On page 72
To D TUNER CIRCUIT (CN101) On page 69
To D TUNER CIRCUIT (CN102) On page 69


VOICE COMPOSITION SIGNAL
IC201
MSM6650GSVIK
VOICE COMPOSITION
IC203
XLU2040F-T2
VOICE COMPOSITION CONTROL
IC402
BA4558FDXT1
BUFFER AMP
Q841, 842
2SC3311AIRTA
MUTING
Q843
UN4115TA
MUTING CONT.
D801
MA165TA
To FL CIRCUIT (CP601)
On page 77
To FL CIRCUIT (CP602)
On page 77

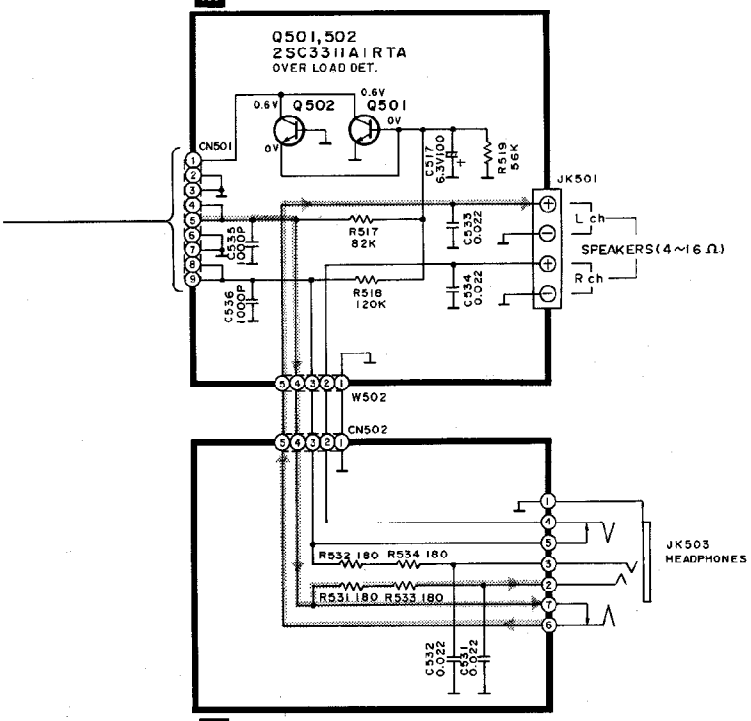

Q271, 272
2SC3311AIRTA
SWITCHING
Q273, 274
UN4115TA
SWITCHING
CONTROL
IC204
BA4558FDXTI
BUFFER AMP
IC205
UPC1891A
ARTIFICIAL STEREO
IC206
BA4558FDXTI
BUFFER AMP
IC801
XLU2040F-T2
DATA CONTROL
(SYSTEM CONT.)
IC403
AN6554NSFE2
SURROUND AMP
Q401
UN4115TA
SWITCHING CONT.
Q402
2SD1450RSTTA
SWITCHING (SURR)
TP401
(Lch OUT)
TP402
(Rch OUT)
14.9V
-15.1V
5V


IC405
BA4558FDXTI
BUFFER AMP
Q409,410
2SD1450RSTTA
MUTING
IC501
SV1310ID
POWER AMP
Q411
UN4115TA
MUTING CONT.
D201
MA165TA
Q403,404
2SK381BCTA
SWITCHING
(V.BASS)
Q405,406
2SD2144STA
MUTING(-10dB)
IC404
M62411FP-E1
ASP
TP403
D402
MA700TA
Q407
UN4212TA
SWITCHING
(V.BASS)
D401
MA4091MTA
D404
MA165TA
D403
MA165TA
Q404
Q406
Q403
Q405

## K MAIN CIRCUIT

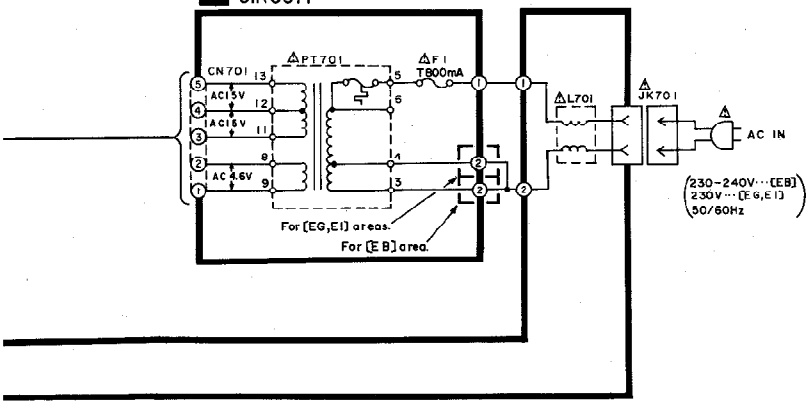


## M SPEAKER TERMINAL CIRCUIT

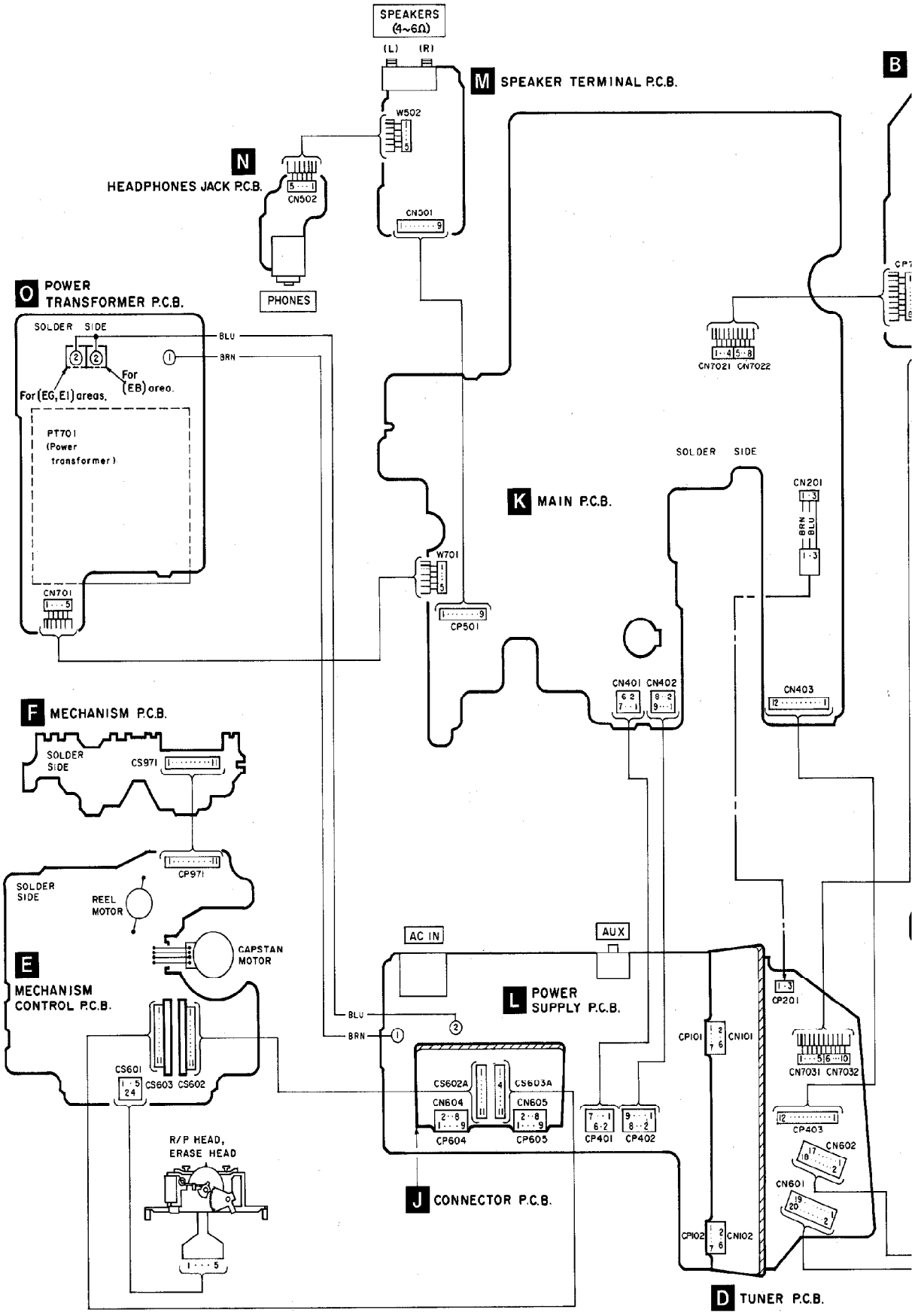


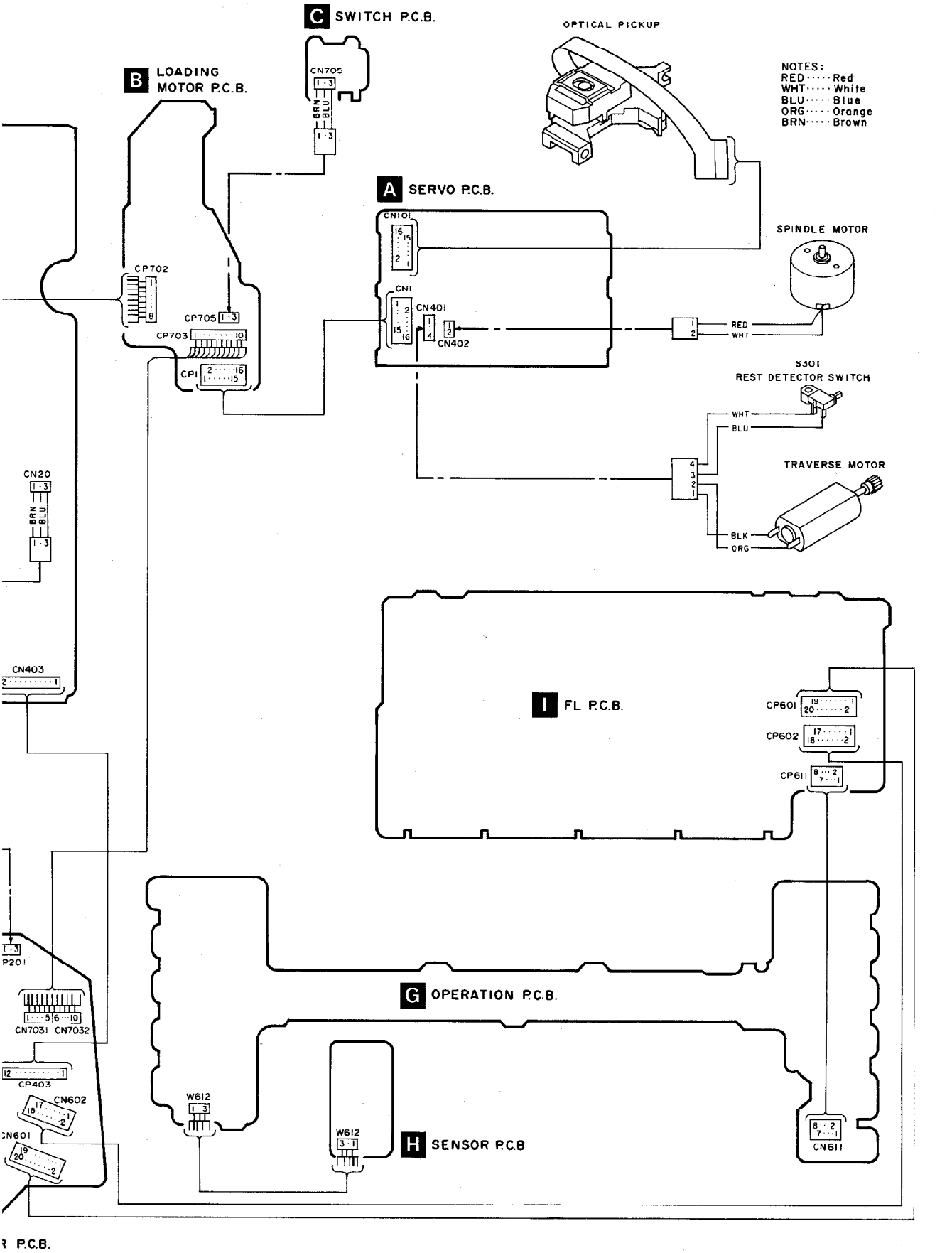

## N HEADPHONES JACK CIRCUIT

## O POWER TRANSFORMER CIRCUIT

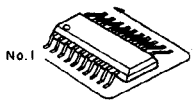


# ■WIRING CONNECTION DIAGRAM



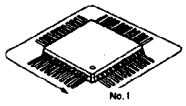

C SWITCH P.C.B.
CN705
BRN
BLU
OPTICAL PICKUP
NOTES:
RED····· Red
WHT····· White
BLU····· Blue
ORG····· Orange
BRN····· Brown
B LOADING MOTOR P.C.B.
A SERVO P.C.B.
CN101
SPINDLE MOTOR
CP702
CP705
CP703
CP1
CN1
CN401
CN402
RED
WHT
S301
REST DETECTOR SWITCH
WHT
BLU
TRAVERSE MOTOR
BLK
ORG
CN201
BRN
BLU
CN403
I FL P.C.B.
CP601
CP602
CP611
G OPERATION P.C.B.
CN7031
CN7032
CP403
CN602
CN601
W612
W612
H SENSOR P.C.B
CN611
P201
P.C.B.

# ■ TERMINAL GUIDE OF IC'S TRANSISTORS AND DIODES

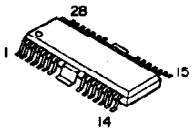



| | | | |
|---|---|---|---|
| AN6554NSFE2 | 14Pin | BU2042FE1 | 18Pin |
| MC14052BFR2 | 16Pin | AN8832SBE1 | 28Pin |
| XLU2040F-T2 | 16Pin | LH5347NE | 32Pin |
| M62411FP-E1 | 42Pin | | |

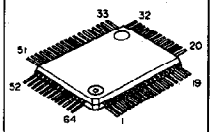
| | |
|---|---|
| CXA1697QT6 | 48Pin |
| MN662740RE | 80Pin |



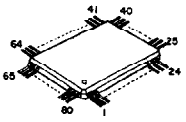

BA6890FPE1
XRA6264AFPE1



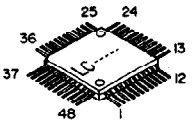

MSM6650GSV1K



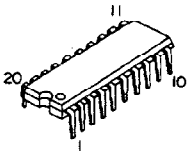

UPD78044A077



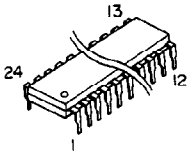

LC66306A4D87



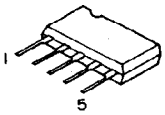

UPC1891A



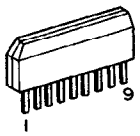

LA1830-H
LC7218



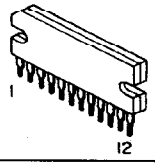

BA7755A



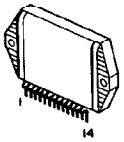

TA7291S



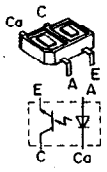

BA3920



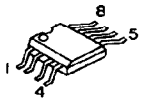

SVI3101D



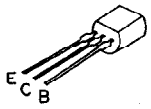

RVSGP2S24BC




BA4558FDXT1




2SB621AQRSTA
2SC3811QRSTA

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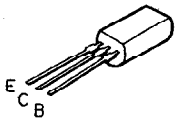
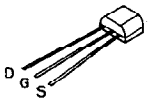
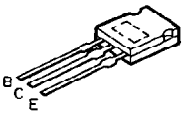


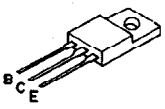

2SK381BCTA



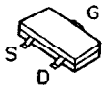

2SB1357EFTA
2SD2037EFTA




2SD2374PQAU

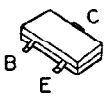



2SJ364QTX



2SA1309AQSTA
2SC2785FETA
2SC2787LTA
2SC3311AIRTA
2SC3311ARSTA
2SD1450STA
2SD1450RSTTA

UN411FTA
UN4114TA
UN4115TA
UN4212TA
UN4213TA

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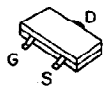
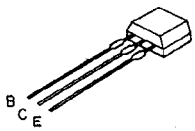
2SC4102RT106
2SD1819RTX
2SD2436STXRA
UN5114TX

2SK664TX

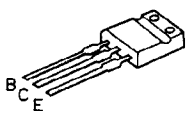


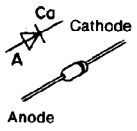

XN1210TX
XN1501TX
FMW1T98

2SD2144STA

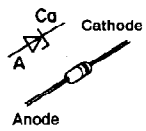



2SD2137PQTA



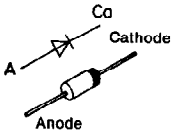




1SS291TA
MA165TA
MA188TA
MA700TA
RVD1SS133TA
SVD1SR139TA

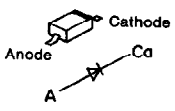


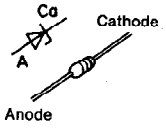

MA4100LTA
MA4120MTA
MA4150HTA
MA4200LTA

RL1N4003N02
RL154M11



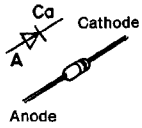

MA110TX



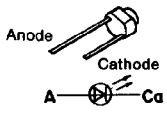




MA4051LTA
MA4051MTA
MA4062HTA
MA4075MTA
MA4082MTA
MA4091HTA
MA4091MTA

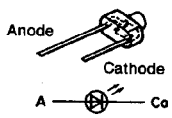
MA185TA




SLR-305MC




LNJ301MPUJA



# ■ REPLACEMENT PARTS LIST

**Notes:** *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
*Warning: This product uses a laser diode. Refer to caution statements on page 3.
*ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| | | INTEGRATED CIRCUIT(S) | |
| | | | |
| IC101 | LA1830-H | FM/AM IF AMP/AM OSC | |
| IC102 | LC7218 | PLL FREQ. SYNTHESIZER | |
| IC201 | MSM6650GSV1K | VOICE COMPOSITION | |
| IC202 | LH5347N4 | 4M ROM | |
| IC203 | XLU2040F-T1 | VOICE COMPOSITION CONT. | |
| IC204 | BA4558FDXT1 | BUFFER AMP. | |
| IC205 | UPC1891A | ARTIFICIAL STEREO | |
| IC206 | BA4558FDXT1 | BUFFER AMP. | |
| IC401 | MC14052BFR2 | INPUT SELECTOR | |
| IC402 | BA4558FDXT1 | BUFFER AMP. | |
| IC403 | AN6554NSFE2 | SURROUND AMP. | |
| IC404 | M62411FP-E1 | ASP | |
| IC405 | BA4558FDXT1 | BUFFER AMP. | |
| IC501 | SVI3101D | POWER AMP. | ⚠ |
| IC601 | UPD78044A077 | SYSTEM CONT./FL DRIVE | |
| IC651 | XLU2040F-T1 | LED DRIVE | |
| IC701 | BA3920 | POWER SUPPLY CONT. | ⚠ |
| IC701A | TA7291S | LOADING MOTOR DRIVE | |
| IC801 | XLU2040F-T1 | DATA CONT. | |
| IC971 | RVSGP2S24BC | PHOTO INTERRUPTER | |
| IC972 | RVSGP2S24BC | PHOTO INTERRUPTER | |
| | | | |
| | | TRANSISTOR(S) | |
| | | | |
| Q101, 102 | 2SC2787L | TRANSISTOR | |
| Q103, 104 | 2SC2785FE | TRANSISTOR | |
| Q106 | UN411FTA | TRANSISTOR | |
| Q107, 108 | 2SC3311ARSTA | TRANSISTOR | |
| Q191-193 | 2SC3311ARSTA | TRANSISTOR | |
| Q201, 202 | 2SA1309A-R | TRANSISTOR | |
| Q203 | UN4212TA | TRANSISTOR | |
| Q204 | 2SC3311AIRTA | TRANSISTOR | |
| Q271, 272 | 2SC3311AIRTA | TRANSISTOR | |
| Q273, 274 | UN4115 | TRANSISTOR | |
| Q401 | UN4115 | TRANSISTOR | |
| Q402 | 2SD1450RTA | TRANSISTOR | |
| Q403, 404 | 2SK381BCDTA | TRANSISTOR | |
| Q405, 406 | 2SD2144S | TRANSISTOR | |
| Q407 | UN4212TA | TRANSISTOR | |
| Q408 | UN4115 | TRANSISTOR | |
| Q409, 410 | 2SD1450RTA | TRANSISTOR | |
| Q411 | UN4115 | TRANSISTOR | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q501-504 | 2SC3311AIRTA | TRANSISTOR | |
| Q601 | UN4213 | TRANSISTOR | |
| Q611 | 2SC3811QRSTA | TRANSISTOR | |
| Q631-635 | UN4114TA | TRANSISTOR | |
| Q681 | UN411FTA | TRANSISTOR | |
| Q682 | UN4114TA | TRANSISTOR | |
| Q701 | 2SC3311AIRTA | TRANSISTOR | |
| Q702 | 2SB1357EFTA | TRANSISTOR | ⚠ |
| Q703 | 2SD2374PQAU | TRANSISTOR | ⚠ |
| Q704 | 2SC3940AQSTA | TRANSISTOR | ⚠ |
| Q705 | 2SD2374PQAU | TRANSISTOR | ⚠ |
| Q706, 707 | 2SB1357EFTA | TRANSISTOR | |
| Q708 | 2SB621A-R | TRANSISTOR | |
| Q709 | 2SD2137PQTA | TRANSISTOR | |
| Q710 | 2SC3311AIRTA | TRANSISTOR | |
| Q711 | 2SC3940AQSTA | TRANSISTOR | ⚠ |
| Q712 | 2SD2037EFTA | TRANSISTOR | ⚠ |
| Q713 | 2SC3311AIRTA | TRANSISTOR | ⚠ |
| Q841, 842 | 2SC3311AIRTA | TRANSISTOR | |
| Q843 | UN4115 | TRANSISTOR | |
| | | | |
| | | DIODE(S) | |
| | | | |
| D101 | MA4051MTA | DIODE | ⚠ |
| D102 | MA165 | DIODE | |
| D201 | MA165 | DIODE | |
| D301 | MA4120 | DIODE | ⚠ |
| D400 | MA4051-L | DIODE | |
| D401 | MA4091-M | DIODE | ⚠ |
| D402 | MA700TA | DIODE | |
| D403, 404 | MA165 | DIODE | |
| D601 | 1SS291TA | DIODE | |
| D602-604 | MA165 | DIODE | |
| D605 | MA4051MTA | DIODE | |
| D611, 612 | MA165 | DIODE | |
| D621-626 | MA4075MTA | DIODE | |
| D631-642 | SLR-305MC | L. E. D. | |
| D643, 644 | MA165 | DIODE | |
| D645-649 | SLR-305MC | L. E. D. | |
| D681-691 | LNJ301MPUJA | L. E. D. | |
| D695 | MA165 | DIODE | |
| D701, 702 | RL1N4003N02 | DIODE | ⚠ |
| D703-706 | RL154M11 | DIODE | ⚠ |
| D707 | MA165 | DIODE | |
| D709, 710 | RL1N4003N02 | DIODE | ⚠ |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D711, 712 | MA185TA | DIODE | ⚠ |
| D713 | MA4051-L | DIODE | ⚠ |
| D718, 719 | MA4150M | DIODE | ⚠ |
| D720 | MA165 | DIODE | |
| D721 | MA4200LTA | DIODE | ⚠ |
| D725 | MA4051-L | DIODE | ⚠ |
| D726 | MA4062-H | DIODE | ⚠ |
| D728 | MA4082MTA | DIODE | ⚠ |
| D730 | MA4100LTA | DIODE | ⚠ |
| D731, 732 | MA4091HTA | DIODE | ⚠ |
| D733 | MA4062-H | DIODE | ⚠ |
| D734 | MA4051-L | DIODE | ⚠ |
| D751 | SVD1SR139TA | DIODE | |
| D801 | MA165 | DIODE | |
| D899 | 1SS291TA | DIODE | |
| D971 | RVD1SS133TA | DIODE | |
| | | | |
| | | COIL(S) | |
| | | | |
| L101 | ELESN1R0MA | COIL | |
| L103 | ELEXTR47MA9 | COIL | |
| L104 | RLQA100JT-Y | COIL | |
| L105, 106 | RLQZB822KT-D | COIL | |
| L111 | ELEXT1R0KA9 | COIL | |
| L151 | SLM1B10M-1M | COIL | |
| L191 | ELESN1R0MA | COIL | |
| L201, 202 | RLQA100JT-Y | COIL | |
| L203 | ELEXT1R0KA9 | COIL | |
| L211 | RLQA100JT-Y | COIL | |
| L601 | RLQA100JT-Y | COIL | |
| L625, 626 | ELEXT101KA9 | COIL | |
| L701 | RLQZ271M | COIL | ⚠ |
| L701A | ELESN330KA | COIL | |
| | | | |
| | | TRANSFORMER(S) | |
| | | | |
| PT701 | RTP4H5B001-X | POWER TRANSFORMER | ⚠ |
| | | | |
| | | COMPONENT COMBINATION(S) | |
| | | | |
| Z102 | RLI2Z006M-T | COMPONENT COMBINATION | |
| Z191 | RLA6Z005M-T | COMPONENT COMBINATION | |
| Z601 | RAT0010 | BUZZER | |
| Z602 | EXDF12E473J | COMPONENT COMBINATION | |
| Z691 | RCDHC-278N | REMOTE SENSOR | |
| Z971 | EXBF6L306SYV | COMPONENT COMBINATION | |
| | | | |
| | | FILTER(S) | |
| | | | |
| CF201 | RLFFETNGD01L | FILTER | |
| CF202 | RLFFETMGD01L | FILTER | |
| | | | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | OSCILLATOR(S) | |
| | | | |
| X101 | RSXZ456KM07M | OSCILLATOR(456KHz) | |
| X102 | RLFDFTD03M1 | OSCILLATOR(10.7MHz) | |
| X103 | SVQ49U722-S | OSCILLATOR(7.2MHz) | |
| X201 | EFOEC4004T4 | OSCILLATOR(4MHz) | |
| X601 | RSXA4M19S02T | OSCILLATOR(4.19MHz) | |
| | | | |
| | | DISPLAY TUBE(S) | |
| | | | |
| FL601 | RSL0184-F | DISPLAY TUBE | |
| | | | |
| | | FM FRONT END PACK ASS'Y(S) | |
| | | | |
| Z120 | RAL0019 | FM FRONT END PACK | |
| | | | |
| | | FUSE(S) | |
| | | | |
| F1 | XBA2C08TB0 | FUSE 250V 800mA | ⚠ |
| | | | |
| | | SWITCH(ES) | |
| | | | |
| S631 | EVQ21405R | TAPE/PLAY | |
| S632 | EVQ21405R | CD/PLAY | |
| S633 | EVQ21405R | TUNER/BAND | |
| S634 | EVQ21405R | STOP/MODE SET | |
| S635 | EVQ21405R | R.SKIP/DOWN | |
| S636 | EVQ21405R | F.SKIP/UP | |
| S661 | EVQ21405R | POWER STANDBY/ON | |
| S662 | EVQ21405R | CONTROL OPEN/CLOSE | |
| S663 | EVQ21405R | EFFECT | |
| S664 | EVQ21405R | SOUNDSCAPE | |
| S665 | EVQ21405R | CLOCK/TIMER | |
| S666 | EVQ21405R | TIMER REC/PLAY | |
| S667 | EVQ21405R | VOLUME UP | |
| S668 | EVQ21405R | VOLUME DOWN | |
| S669 | EVQ21405R | CD OPEN/CLOSE | |
| S670 | EVQ21405R | TAPE OPEN/CLOSE | |
| S671 | EVQ21405R | SOUND MENU | |
| S672 | EVQ21405R | V.BASS | |
| S673 | EVQ21405R | MEMORY | |
| S674 | EVQ21405R | DOLBY NR | |
| S675 | EVQ21405R | DIRECTION | |
| S676 | EVQ21405R | REC | |
| S677 | EVQ21405R | EDIT | |
| S678 | EVQ21405R | AUX | |
| S701 | RSH1A024-U | OPEN/CLOSE DETECTOR | |
| S702 | RSH1A005 | LASER ON/OFF | |
| S703 | RSH1A024-U | HALF OPEN DET. | |
| S971 | RSH1A018-U | MODE DET. | |
| S972 | RSH1A019-U | HALF DET. | |
| S973 | RSH1A019-U | ATS/CrO2 DET. | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| S974 | RSH1A019-U | R. REC INH. DET. | |
| S975 | RSH1A019-U | F. REC INH. DET. | |
| S976 | RSH1A019-U | ATS/METAL DET. | |
| | | | |
| | | RELAY(S) | |
| | | | |
| RL701 | RSY0013M-0 | RELAY | ⚠ |
| | | | |
| | | CONNECTOR(S) AND SOCKET(S) | |
| | | | |
| CN101 | RJU063W07T | SOCKET(7P) | |
| CN102 | RJU063W07T | SOCKET(7P) | |
| CN201 | REX0649 | CONNECTOR UNIT(3P) | |
| CN401 | RJU063W07T | SOCKET(7P) | |
| CN402 | RJU063W09T | SOCKET(9P) | |
| CN403 | RJU057W012 | SOCKET(12P) | |
| CN501 | RJU057W009 | SOCKET(9P) | |
| CN502 | RJS1A6605 | CONNECTOR(5P) | |
| CN601 | RJS20Q11ZA | CONNECTOR(20P) | |
| CN602 | RJS18Q11ZA | CONNECTOR(18P) | |
| CN604 | RJU063W09T | SOCKET(9P) | |
| CN605 | RJU063W09T | SOCKET(9P) | |
| CN611 | RJS1A6208-1 | CONNECTOR(8P) | |
| CN701 | SJT30544-H | CONNECTOR(5P) | |
| CN705 | REX0635 | CONNECTOR UNIT(3P) | |
| CN7021 | RJS1A6604 | CONNECTOR(4P) | |
| CN7022 | RJS1A6604 | CONNECTOR(4P) | |
| CN7031 | RJS1A6605 | CONNECTOR(5P) | |
| CN7032 | RJS1A6605 | CONNECTOR(5P) | |
| CP1 | RJS1A1416-D | CONNECTOR(16P) | |
| CP101 | RJT063W07T | CONNECTOR(7P) | |
| CP102 | RJT063W07T | CONNECTOR(7P) | |
| CP201 | SJTD313 | CONNECTOR(3P) | |
| CP401 | RJT063W07T | CONNECTOR(7P) | |
| CP402 | RJT063W09T | CONNECTOR(9P) | |
| CP403 | RJT057W012-1 | CONNECTOR(12P) | |
| CP501 | RJT057W009-1 | CONNECTOR(9P) | |
| CP601 | RJS20Q11ZA | CONNECTOR(20P) | |
| CP602 | RJS18Q11ZA | CONNECTOR(18P) | |
| CP604 | RJT063W09T | CONNECTOR(9P) | |
| CP605 | RJT063W09T | CONNECTOR(9P) | |
| CP611 | RJS8Q8ZA | CONNECTOR(8P) | |
| CP702 | SJT30844-H | CONNECTOR(8P) | |
| CP703 | SJT31043-V | CONNECTOR(10P) | |
| CP705 | SJTD313 | CONNECTOR(3P) | |
| CS602A | RJT071H11 | CONNECTOR(11P) | |
| CS603A | RJT071H11 | CONNECTOR(11P) | |
| CS971 | RJU071H11M | SOCKET(11P) | |
| W502 | RJS1A6605 | CONNECTOR(5P) | |
| W612 | REZ0697 | CONNECTOR UNIT(3P) | |
| W701 | RJS1A6605 | CONNECTOR(5P) | |
| | | | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | JACK(S) | |
| | | | |
| JK101 | RJH4202M | ANT. TERMINAL | |
| JK401 | SJF3068-7N | AUX TERMINAL | |
| JK501 | RJR0054 | SPEAKER TERMINAL | |
| JK503 | RJJ37TN01-C | HEADPHONES JACK | |
| JK701 | SJS9236 | AC INLET | ⚠ |
| | | | |
| | | GND PLATE(S) | |
| | | | |
| E701 | SNE1004-2 | GND PLATE | |
| | | | |
| | | FUSE HOLDER(S) | |
| | | | |
| FC1, 2 | EYF52BC | FUSE HOLDER | |
| | | | |
| | | <SERVO P. C. B.> | |
| | | INTEGRATED CIRCUIT(S) | |
| | | | |
| IC101 | AN8832SBE1 | SERVO AMP. | |
| IC301 | LC66306A4D87 | CD SYSTEM CONT. | |
| IC401 | BA6890FPE1 | MOTOR DRIVE | |
| IC501 | MN662740RE | SERVO PROCESSOR | |
| | | | |
| | | TRANSISTOR(S) | |
| | | | |
| Q203 | 2SB709QRSTX | TRANSISTOR | |
| Q601 | 2SB709QRSTX | TRANSISTOR | |
| Q602 | FMW1T98 | TRANSISTOR | |
| | | | |
| | | DIODE(S) | |
| | | | |
| D601 | MA110TX | DIODE | |
| | | | |
| | | COIL(S) | |
| | | | |
| L601, 602 | RLB0003 | COIL | |
| | | | |
| | | OSCILLATOR(S) | |
| | | | |
| X501 | RSXZ16M9M01T | OSCILLATOR(16. 9344MHz) | |
| | | | |
| | | SWITCH(ES) | |
| | | | |
| S301 | SSHD5 | REST DET. | |
| | | | |
| | | CONNECTOR(S) AND SOCKET(S) | |
| | | | |
| CN1 | RJU035T016-1 | SOCKET(16P) | |
| CN101 | RJU035T016-1 | SOCKET(16P) | |
| CN401 | RJT068W04V | CONNECTOR(4P) | |
| CN402 | RJT068W02V | CONNECTOR(2P) | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| | | <MECHANISM CONT. P. C. B.> | |
| | | INTEGRATED CIRCUIT(S) | |
| | | | |
| IC601 | CXA1697QT6 | P/R AMP./DOLBY NR/AGC/TPS | |
| IC602 | BA7755A | R/P SELECT | |
| IC603 | XRA6264AFPE1 | MECHANISM CONT. | |
| IC604 | BU2042FE1 | DATA CONTROL | |
| | | | |
| | | TRANSISTOR(S) | |
| | | | |
| Q601, 602 | 2SJ364QTX | TRANSISTOR | |
| Q603, 604 | 2SK664TX | TRANSISTOR | |
| Q605, 606 | 2SJ364QTX | TRANSISTOR | |
| Q608 | 2SC4102RT106 | TRANSISTOR | |
| Q609 | 2SD2436STXRA | TRANSISTOR | |
| Q610, 611 | 2SD1450RTA | TRANSISTOR | |
| Q612 | 2SD1819RTX | TRANSISTOR | |
| Q613 | XN1210TX | TRANSISTOR | |
| Q614-616 | 2SD1819RTX | TRANSISTOR | |
| Q617 | XN1501TX | TRANSISTOR | |
| Q618 | 2SD2436STXRA | TRANSISTOR | |
| Q619 | UN5114TX | TRANSISTOR | |
| | | | |
| | | DIODE(S) | |
| | | | |
| D601 | MA110TX | DIODE | |
| D603 | MA110TX | DIODE | |
| D604 | MA188TA | DIODE | |
| | | | |
| | | VARIABLE RESISTOR(S) | |
| | | | |
| VR601, 602 | RRN6B05B24TA | PLAYBACK GAIN ADJ. | |
| VR603 | RRN6B05B14TA | TAPE SPEED ADJ. | |
| | | | |
| | | COIL(S) | |
| | | | |
| L601 | RLQ8C006M-T | COIL | |
| L602 | RLQU470KT-W | COIL | |
| L603, 604 | ELJFB102KF | COIL | |
| L606 | RLQU470KT-W | COIL | |
| | | | |
| | | COMPONENT COMBINATION(S) | |
| | | | |
| Z601 | EXBF7L355SYV | COMPONENT COMBINATION | |
| | | | |
| | | SWITCH(ES) | |
| | | | |
| S601 | RSH1A024-U | DECK OPEN DET. | |
| S602 | RSH1A024-U | DECK CLOSE DET. | |
| | | | |
| | | CONNECTOR(S) AND SOCKET(S) | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| CP971 | RJT071H11A | CONNECTOR(11P) | |
| CS601 | RJS2A0205M1S | CONNECTOR(5P) | |
| CS602 | RJU071H11M | SOCKET(11P) | |
| CS603 | RJU071H11M | SOCKET(11P) | |
| | | | |
| | | CABINET AND CHASSIS | |
| | | | |
| 1 | RHD30007 | SCREW | |
| 2 | RKF0379A-K | BACK GRIL | |
| 3 | XTBS3+8JFZ1 | SCREW | |
| 4 | RWJ1805130XX | FLAT CABLE(5P) | |
| 5 | RWJ1810520QQ | FLAT CABLE(10P) | |
| 6 | RWJ1808400XX | FLAT CABLE(8P) | |
| 7 | RWJ1805590XX | FLAT CABLE(5P) | |
| 8 | RGR0196B-B1A | REAR PANEL | (EB) |
| 8 | RGR0196B-A1A | REAR PANEL | (EG) |
| 8 | RFKHALS10EI | REAR PANEL ASS'Y | (EI) |
| 9 | RMC0158 | TRANSISTOR ORNAMENT | |
| 10 | RFKNALS10AK | SHIELD PLATE ASS'Y | |
| 11 | RFKJALS10EB | BOTTOM CHASSIS ASS'Y | |
| 11-1 | RKA0061B-K1 | FOOT | |
| 12 | RMN0203 | P. C. B. HOLDER | |
| 13 | RMN0288 | SPACER | |
| 14 | RMR0788-W | CONNECTOR GUIDE | |
| 15 | RMN0195 | FL HOLDER PIECE | |
| 16 | RMN0278 | FL HOLDER | |
| 17 | RFKNALS10BK | POWER BUTTON ASS'Y | |
| 18 | RGU1097-K | RESORT BUTTON | |
| 19 | RFKGALS10AK | FRONT PANEL ASS'Y | |
| 19-1 | RKA0061B-K1 | FOOT | |
| 20 | RGU1078-Q | FUNCTION SHINE-AUT BUTTON | |
| 21 | RGU1082-K | VOLUME UP BUTTON | |
| 22 | RGU1083-K | VOLUME DOWN BUTTON | |
| 23 | RGU1084-K | CASSETTE OPEN BUTTON | |
| 24 | RGU1085-K | CD CONTROL BUTTON | |
| 25 | RGU1086-K | CD OPEN BUTTON | |
| 26 | RGU1098-K | EFFECT BUTTON | |
| 27 | RMB0367 | BALANCE SPRING(L) | |
| 28 | RMB0371 | BUTTON SPRING | |
| 29 | RMB0377 | BALANCE SPRING(R) | |
| 30 | RMN0280 | SHINE-AUT LED CASE | |
| 31 | RMN0285 | HEADPHONE HOLDER PIECE | |
| 32 | RMS0480 | CASSETTE PANEL SHAFT | |
| 33 | RMV0082 | LED SHEET | |
| 34 | RDG0282 | DRIVE GEAR | |
| 35 | RDG0283 | GEAR(A) | |
| 36 | RDG0285 | CD LOADING GEAR(L) | |
| 37 | RDG0286 | CD LOADING GEAR(R) | |
| 38 | RDP0073 | CD ROLLER | |
| 39 | RDP0076 | TENSION ROLLER(A) | |
| 40 | RDP0077 | TENSION ROLLER(B) | |

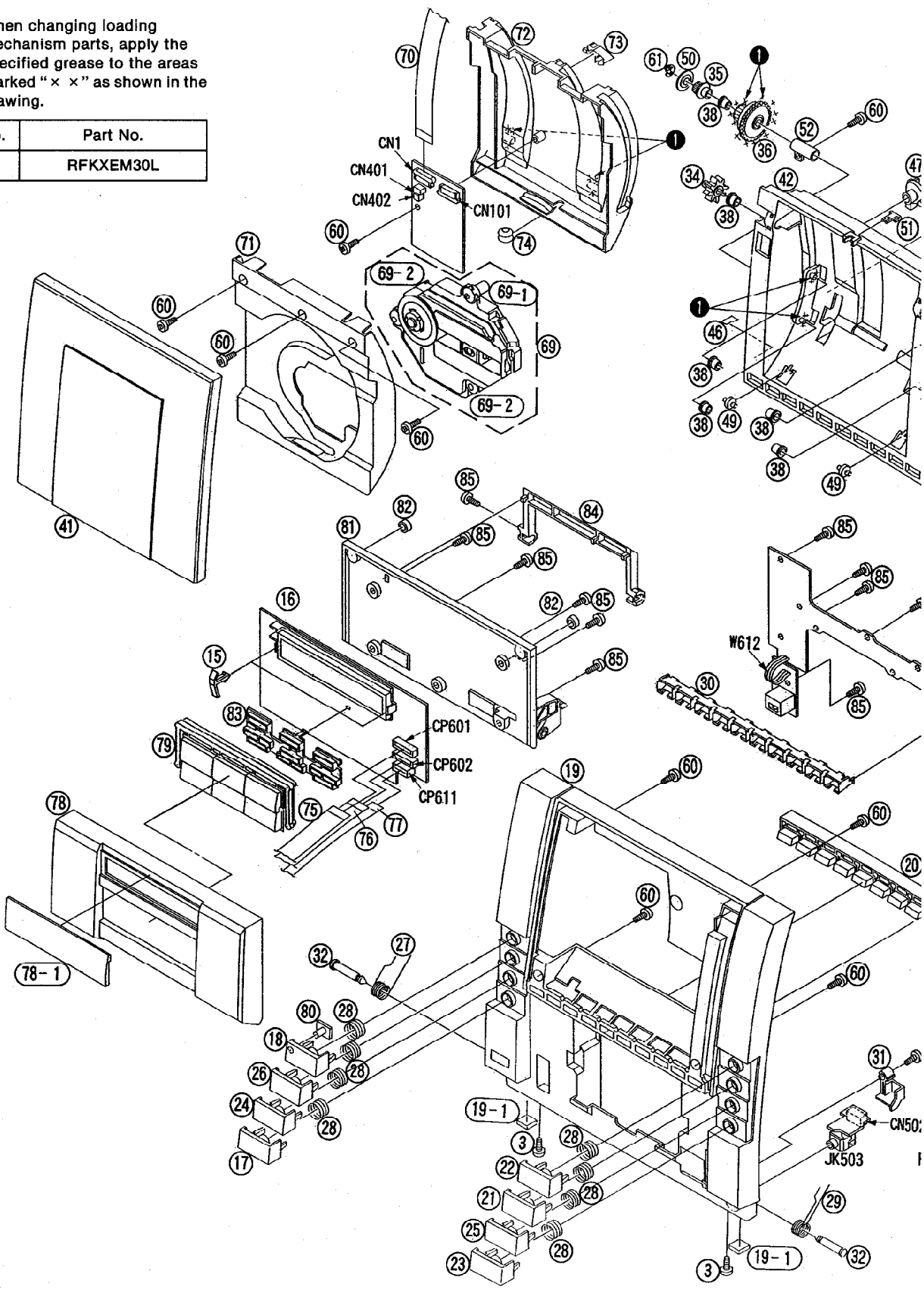
| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 41 | RFKLALS10EB | CD DOOR ASS'Y | |
| 42 | RFKNALS10EGK | CD MECHA. BASE ASS'Y | |
| 43 | RSC0393 | SHIELD PLATE | |
| 44 | RMB0382 | TENSION SPRING | |
| 45 | RMG0370-K | TIMING BELT | |
| 46 | RMG0371-K | CD COVER RUBBER | |
| 47 | RML0347 | LASER SW LEVER | |
| 48 | RML0358 | BELT TENSION ARM | |
| 49 | RMR0701-K | ROLLER(B) | |
| 50 | RMR0775-W | BELT HOLDER | |
| 51 | RMR0785-K | CD COVER GUIDE PIECE | |
| 52 | RMR0787-W | SHAFT RECEIVER | |
| 53 | RMR0817-W | TENSION ROLLER HOLDER | |
| 54 | RMS0476 | CD COVER OPEN/CLOSE SHAFT | |
| 55 | RMS0477 | DOOR OPEN/CLOSE SHAFT | |
| 56 | RDG0281 | PULLEY GEAR | |
| 57 | RDG0287 | ROLL GEAR | |
| 58 | RFKPALS10-K | MOTOR ASS'Y | |
| 59 | RMG0121 | MOTOR BELT | |
| 60 | XTB3+8JFZ | SCREW | |
| 61 | XUC2FT | E RING | |
| 62 | XYN26+C5 | MOTOR SCREW | |
| 63 | RDG0284 | GEAR(B) | |
| 64 | RMB0286 | SW LEVER SPRING | |
| 65 | RML0345 | END DETECT LEVER | |
| 66 | RFKNALS10EK | GEAR BOX(B) ASS'Y | |
| 67 | RMR0790-W | BELT HOLDER PIECE | |
| 68 | RMS0486 | DETECT LEVER SHAFT | |
| 69 | RAE0135Z | TRAVERSE DECK ASS'Y | |
| 69-1 | SHGD157 | FLOATING RUBBER(A) | |
| 69-2 | SHGD165 | FLOATING RUBBER(B) | |
| 70 | REZ0701 | FLEXIBLE P.C.B. (16P) | |
| 71 | RKM0267-N1 | CD CABINET(UPPER) | |
| 72 | RKS0178-H1 | CD CABINET(LOWER) | |
| 73 | RMR0786-C | CD BLOCK GUIDE PIECE | |
| 74 | SHGD112 | CUSHION RUBBER(A) | |
| 75 | REZ0698 | FLEXIBLE P.C.B. (20P) | |
| 76 | REZ0699 | FLEXIBLE P.C.B. (18P) | |
| 77 | REZ0700 | FLEXIBLE P.C.B. (8P) | |
| 78 | RFKGALS10BK | DECK PANEL ASS'Y | |
| 78-1 | RKW0347-V | FL WINDOW | |
| 79 | RGZ0023-K | SELECTOR BUTTON ASS'Y | |
| 80 | RGL0247-Q | PANEL LIGTH | |
| 81 | RKF0381-K | DECK REVERSE SIDE COVER | |
| 82 | RMG0249-K1 | CUSHION RUBBER(B) | |
| 83 | RMN0279 | LED CASE | |
| 84 | RMR0776-K | PANEL HOLDER | |
| 85 | XTBS26+8J | SCREW | |
| 86 | SHE187-2 | P.C.B. SUPPORT | |
| 87 | XTB3+12JFZ | SCREW | |
| 88 | XTB3+20JFZ | SCREW | |
| 89 | XTB3+6FFZ | SCREW | |

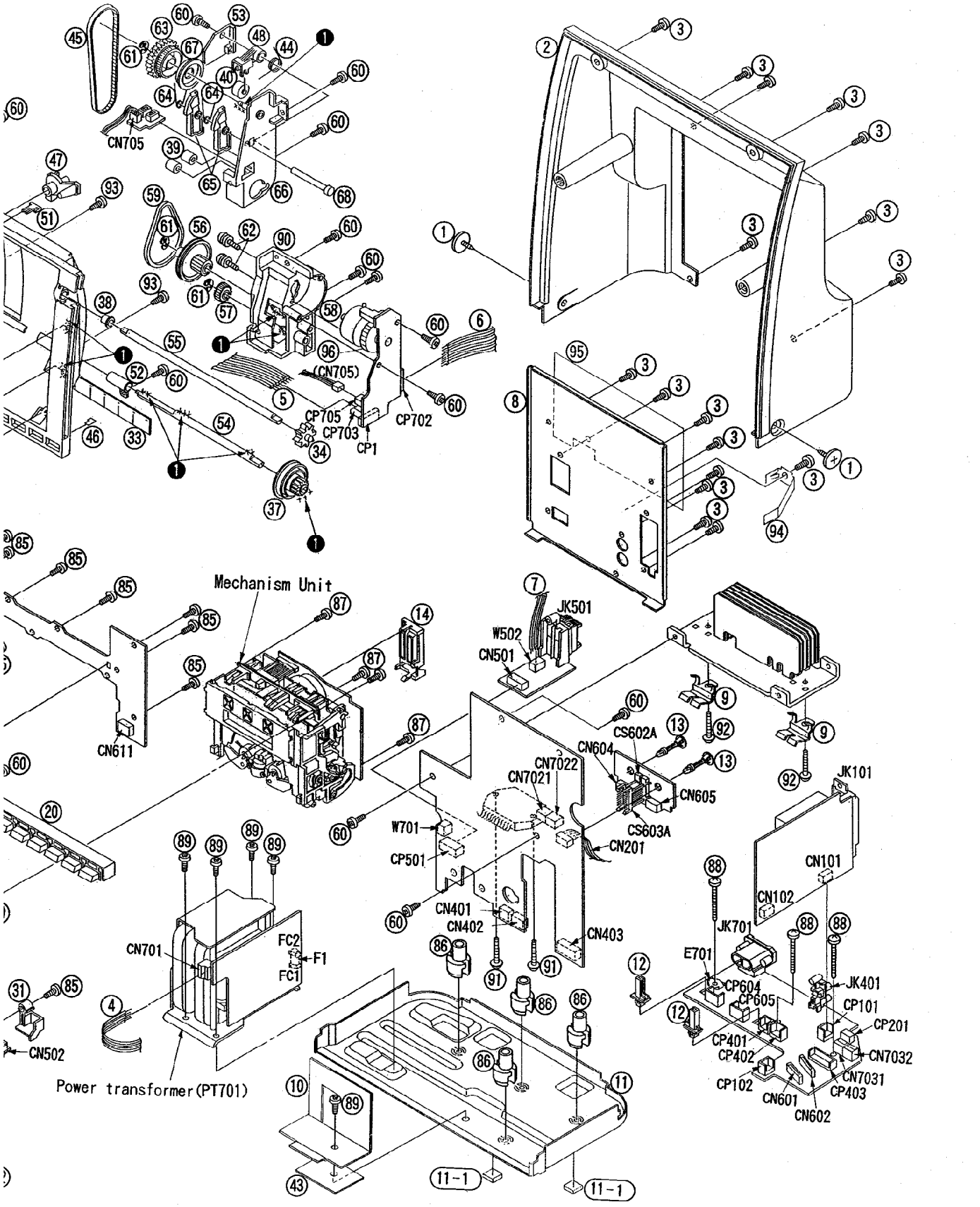
| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 90 | RFKNALS10DK | GEAR BOX(A) ASS'Y | |
| 91 | XTW3+15T | SCREW | |
| 92 | XTW3+8T | SCREW | |
| 93 | XTB2+10G | SCREW | |
| 94 | RMC0246 | EARTH PLATE | |
| 95 | RMZ0299 | INTERRUPT HEAT SHEET | |
| 96 | RSC0406 | MOTOR SHIELD PLATE | |
| | | | |
| | | MECHANISM PARTS | |
| | | | |
| 101 | RXF0045 | FLYWHEEL(F) | |
| 101-1 | RMQ0420 | WASHER | |
| 102 | RXF0046 | FLYWHEEL(R) | |
| 102-1 | RMQ0421 | WASHER | |
| 103 | RML0272 | SWITCH LEVER | |
| 104 | RXQ0265 | HEAD P.C.B. ASS'Y | |
| 104-1 | RMB0266-1 | SPRING | |
| 104-2 | RXM0036 | REG/REF. ROD ASS'Y | |
| 105 | RGK0582-K | ORNAMENT PLATE | |
| 106 | RXQ0316-1 | HEAD BLOCK ASS'Y | |
| 106-1 | RHD17015 | SCREW, AZIMUTH ADJUSTMENT | |
| 106-2 | RMB0352 | SPRING, AZIMUTH ADJUSTMENT | |
| 106-3 | RMQ0360A | CONNECTOR HOLDER | |
| 107 | RDV108ZA | BELT | |
| 108 | RDK0019A | MAIN GEAR | |
| 109 | RMB0261 | SPRING | |
| 110 | RMB0262 | SPRING | |
| 111 | RMB0263 | SPRING(F) | |
| 112 | RMB0264 | SPRING(R) | |
| 113 | RUW147ZA | SPRING | |
| 114 | RML0267A | TRIGGER LEVER | |
| 115 | RML0268A | REG./REF. LEVER | |
| 116 | RMM0091A | BAKE ROD | |
| 117 | RMS0398-1 | MOVING IRON CORE | |
| 118 | RSJ0003 | SOLENOID UNIT | |
| 119 | RUS609ZC | SPRING | |
| 120 | RXG0036 | REEL GEAR | |
| 121 | RXL0106 | IDLER LEVER UNIT | |
| 122 | RXP0052 | PINCH ARM UNIT(F) | |
| 122-1 | RMB0259 | SPRING | |
| 123 | RXP0053 | PINCH ARM UNIT(R) | |
| 123-1 | RMB0260 | SPRING | |
| 124 | RDG0206A-1 | LOADING GEAR | |
| 125 | RDG0209A | INTERMEDIATE GEAR | |
| 126 | REM0036-1 | CAPSTAN MOTOR UNIT | |
| 127 | REM0043 | REEL MOTOR | |
| 128 | RHD26013 | SCREW | |
| 129 | RMC0169 | RACK HOLDER PLATE | |
| 130 | RMQ0314A | SURASUTO SPACER | |
| 131 | RXG0037 | FUNCTION GEAR ASS'Y | |
| 132 | RYF0226-K | CASSETTE HOLDER ASS'Y | |
| 133 | RMQ0430 | RIVET | |

# ■ CABINET PARTS LOCATION

**Note:** When changing loading mechanism parts, apply the specified grease to the areas marked "× ×" as shown in the drawing.

| Ref. No. | Part No. |
|---|---|
| ❶ | RFKXEM30L |



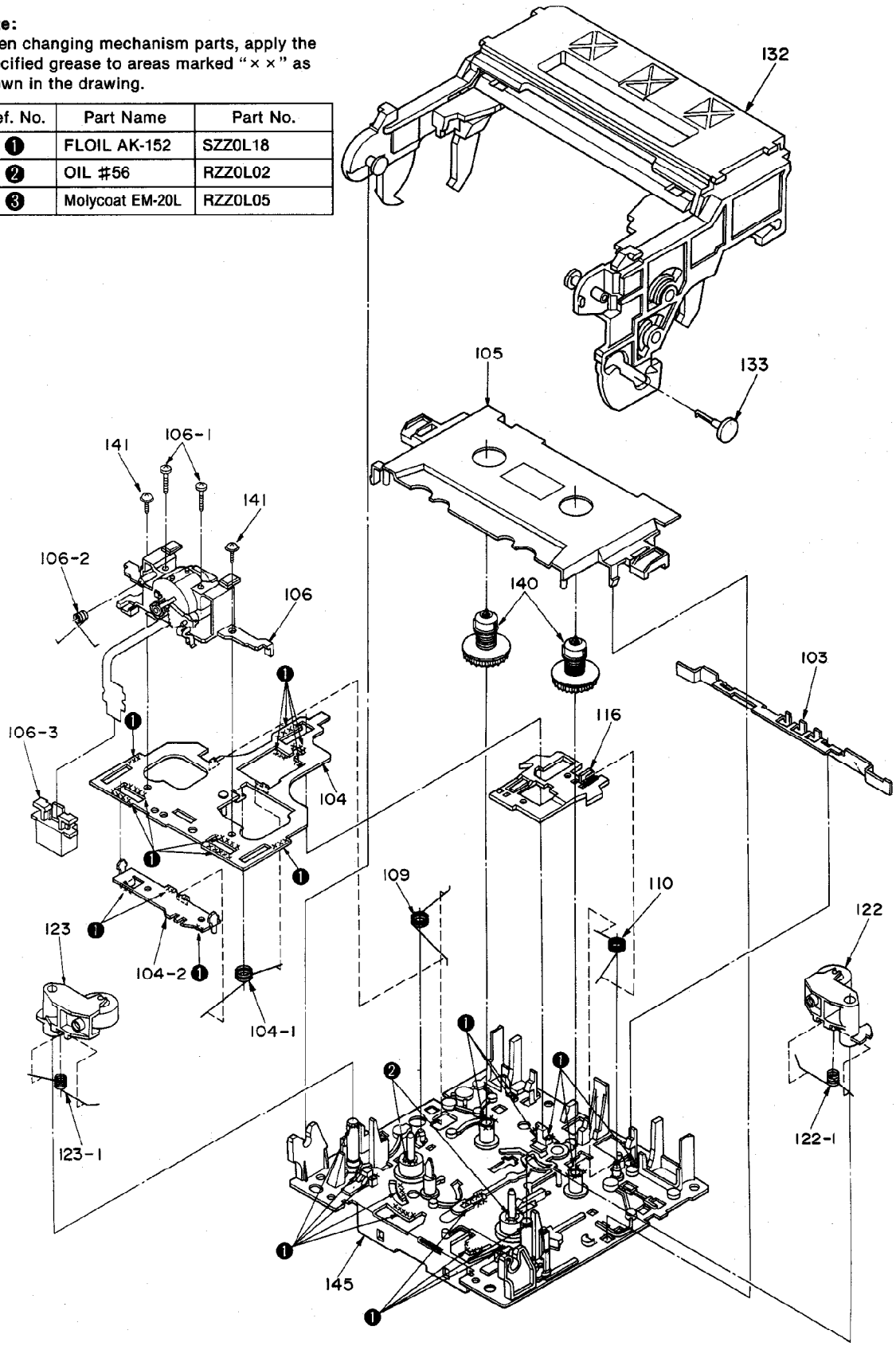

Mechanism Unit
Power transformer(PT701)
CN705
(CN705)
CP705
CP703
CP702
CP1
CN611
JK501
W502
CN501
CS602A
CN604
CN605
CS603A
CN7022
CN7021
CN201
W701
CP501
CN401
CN402
CN403
JK101
CN101
CN102
JK701
E701
CP604
CP605
JK401
CP101
CP201
CP401
CP402
CN7032
CN7031
CP403
CP102
CN601
CN602
CN701
FC2
FC1
F1
CN502
11-1
11-1

# ■ MECHANISM PARTS LOCATION

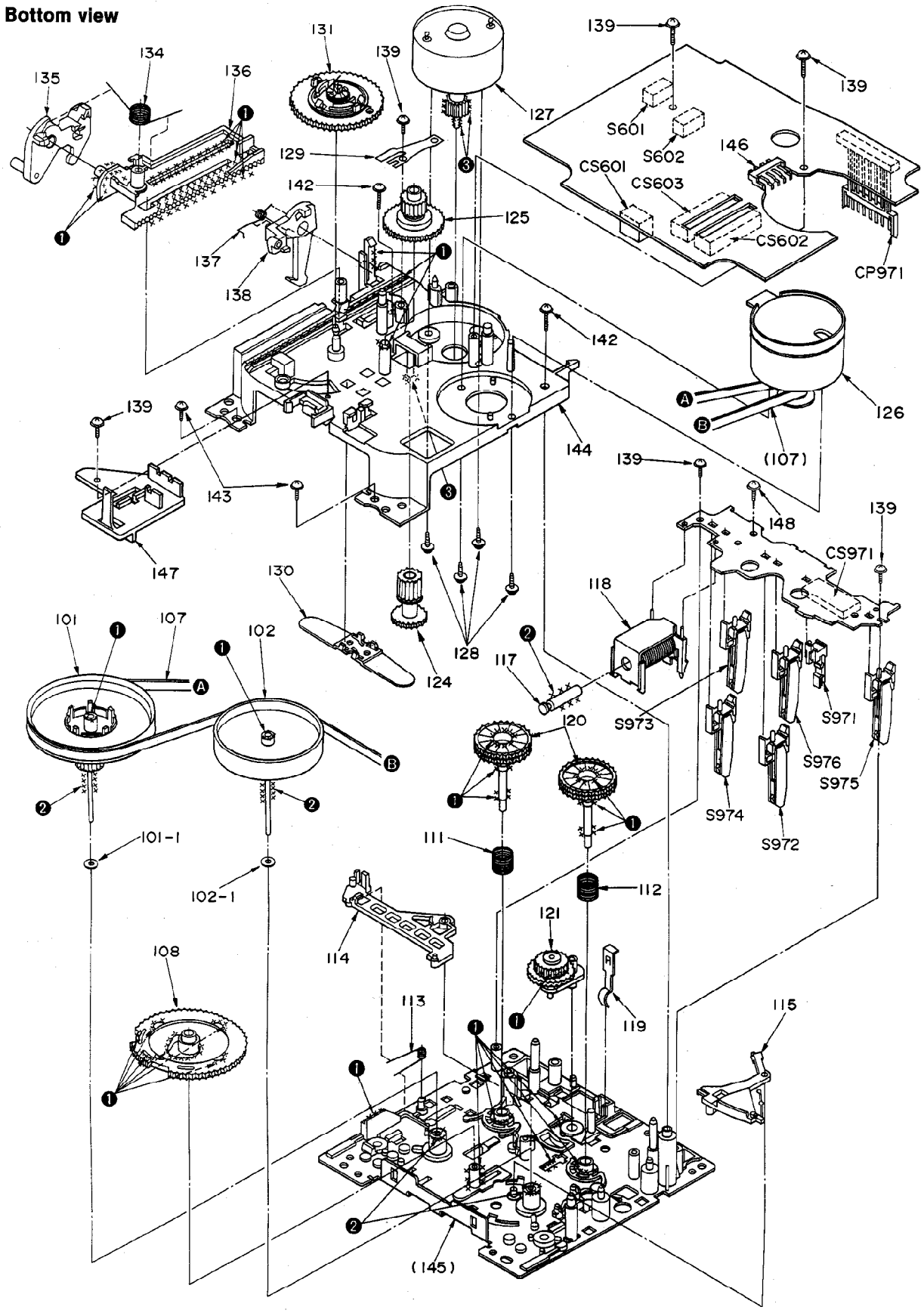
• **Top view**

**Note:**
When changing mechanism parts, apply the specified grease to areas marked "× ×" as shown in the drawing.

| Ref. No. | Part Name | Part No. |
|---|---|---|
| ❶ | FLOIL AK-152 | SZZ0L18 |
| ❷ | OIL #56 | RZZ0L02 |
| ❸ | Molycoat EM-20L | RZZ0L05 |



• **Bottom view**


131
139
134
135
136
139
127
139
S601
S602
139
146
129
CS601
CS603
142
125
CS602
CP971
137
138
142
126
139
144
(107)
143
139
148
139
147
CS971
130
118
101
107
102
128
124
117
120
S973
S971
S976
S975
S974
S972
101-1
111
102-1
112
121
114
108
113
119
115
(145)

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 134 | RMB0269 | SPRING | |
| 135 | RML0270A-1 | DRIVE LEVER | |
| 136 | RMQ0312A | DRIVE RACK | |
| 137 | RMB0268 | SPRING | |
| 138 | RML0271A | HOLDER HOOK | |
| 139 | XTW2+6S | SCREW | |
| 140 | RXR0018 | REEL TABEL UNIT | |
| 141 | XTW2+5L | SCREW | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 142 | XTW26+12S | SCREW | |
| 143 | XTW26+6L | SCREW | |
| 144 | RFKJSCH404AK | SUB CHASSIS ASS'Y | |
| 145 | RFKJSCH404BK | CHASSIS ASS'Y | |
| 146 | RJR0113 | MOTOR CONNECTOR TER. | |
| 147 | RMK0263 | SHOULDER CHASSIS | |
| 148 | XYC2+JF16 | SCREW | |
| | | | |

# ■ RESISTORS AND CAPACTORS

**Notes :** * **Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)**
* **Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)**

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| | | |
| | | RESISTORS |
| | | |
| R103 | ERDS2TJ330 | 1/4W 33 |
| R104 | ERDS2TJ822 | 1/4W 8.2K |
| R105 | ERDS2TJ471 | 1/4W 470 |
| R106 | ERDS2TJ474 | 1/4W 470K |
| R107 | ERDS2TJ331 | 1/4W 330 |
| R108 | ERDS2TJ474 | 1/4W 470K |
| R109 | ERDS2TJ331 | 1/4W 330 |
| R110 | ERDS2TJ102 | 1/4W 1K |
| R112 | ERDS2TJ104 | 1/4W 100K |
| R113 | ERDS2TJ103 | 1/4W 10K |
| R114 | ERDS2TJ562 | 1/4W 5.6K |
| R115 | ERDS2TJ561 | 1/4W 560 |
| R116 | ERDS2TJ102 | 1/4W 1K |
| R117 | ERDS2TJ682T | 1/4W 6.8K |
| R118 | ERDS2TJ562 | 1/4W 5.6K |
| R119 | ERDS2TJ822 | 1/4W 8.2K |
| R120 | ERDS2TJ473 | 1/4W 47K |
| R121 | ERDS2TJ332 | 1/4W 3.3K |
| R122 | ERDS2TJ272T | 1/4W 2.7K |
| R124 | ERDS2TJ391 | 1/4W 390 |
| R125, 126 | ERDS2TJ472 | 1/4W 4.7K |
| R127 | ERDS2TJ103 | 1/4W 10K |
| R128 | ERDS2TJ820 | 1/4W 82 |
| R129 | ERDS2TJ473 | 1/4W 47K |
| R130, 131 | ERDS2TJ102 | 1/4W 1K |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R132 | ERDS2TJ103 | 1/4W 10K |
| R133-137 | ERDS2TJ102 | 1/4W 1K |
| R138 | ERDS2TJ103 | 1/4W 10K |
| R139, 140 | ERDS2TJ272T | 1/4W 2.7K |
| R141, 142 | ERDS2TJ103 | 1/4W 10K |
| R143, 144 | ERDS2TJ222 | 1/4W 2.2K |
| R145, 146 | ERDS2TJ821 | 1/4W 820 |
| R147, 148 | ERDS2TJ474 | 1/4W 470K |
| R149 | ERDS2TJ680T | 1/4W 68 |
| R171, 172 | ERDS2TJ102 | 1/4W 1K |
| R173 | ERDS2TJ471 | 1/4W 470 |
| R175 | ERDS2TJ102 | 1/4W 1K |
| R176 | ERDS2TJ391 | 1/4W 390 |
| R191 | ERDS2TJ103 | 1/4W 10K |
| R192 | ERDS2TJ122 | 1/4W 1.2K |
| R193 | ERDS2TJ182 | 1/4W 1.8K |
| R194 | ERDS2TJ122 | 1/4W 1.2K |
| R195 | ERDS2TJ222 | 1/4W 2.2K |
| R201 | ERDS2TJ473 | 1/4W 47K |
| R201 | ERDS2TJ102 | 1/4W 1K |
| R202 | ERDS2TJ223 | 1/4W 22K |
| R202 | ERDS2TJ272T | 1/4W 2.7K |
| R203 | ERDS2TJ224T | 1/4W 220K |
| R204, 205 | ERDS2TJ473 | 1/4W 47K |
| R206 | ERDS2TJ182 | 1/4W 1.8K |
| R207 | ERDS2TJ473 | 1/4W 47K |
| R208 | ERDS2TJ272T | 1/4W 2.7K |
| R207, 208 | ERDS2TJ102 | 1/4W 1K |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R209 | ERDS2TJ103 | 1/4W 10K |
| R210 | ERDS2TJ473 | 1/4W 47K |
| R210 | ERDS2TJ272T | 1/4W 2.7K |
| R231, 232 | ERDS2TJ222 | 1/4W 2.2K |
| R233, 234 | ERDS2TJ103 | 1/4W 10K |
| R236-244 | ERDS2TJ103 | 1/4W 10K |
| R251 | ERDS2TJ103 | 1/4W 10K |
| R252, 253 | ERDS2TJ472 | 1/4W 4.7K |
| R254 | ERDS2TJ562 | 1/4W 5.6K |
| R255 | ERDS2TJ182 | 1/4W 1.8K |
| R256 | ERDS2TJ102 | 1/4W 1K |
| R257 | ERDS2TJ471 | 1/4W 470 |
| R261 | ERDS2TJ332 | 1/4W 3.3K |
| R262 | ERDS2TJ824 | 1/4W 820K |
| R264 | ERDS2TJ682T | 1/4W 6.8K |
| R265 | ERDS2TJ472 | 1/4W 4.7K |
| R271 | ERDS2TJ152 | 1/4W 1.5K |
| R272 | ERDS2TJ562 | 1/4W 5.6K |
| R273 | ERDS2TJ272T | 1/4W 2.7K |
| R274, 275 | ERDS2TJ102 | 1/4W 1K |
| R276 | ERDS2TJ105T | 1/4W 1M |
| R277 | ERDS2TJ334 | 1/4W 330K |
| R278 | ERDS2TJ105T | 1/4W 1M |
| R279 | ERDS2TJ334 | 1/4W 330K |
| R280, 281 | ERDS2TJ102 | 1/4W 1K |
| R285, 286 | ERDS2TJ273 | 1/4W 27K |
| R287, 288 | ERDS2TJ332 | 1/4W 3.3K |
| R289, 290 | ERDS2TJ102 | 1/4W 1K |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R299 | ERDS2TJ102 | 1/4W 1K |
| R301 | ERG1SJ101E | 1W 100 ⚠ |
| R400 | ERDS2TJ332 | 1/4W 3.3K |
| R401, 402 | ERDS2TJ682T | 1/4W 6.8K |
| R403, 404 | ERDS2TJ473 | 1/4W 47K |
| R405, 406 | ERDS2TJ472 | 1/4W 4.7K |
| R407-410 | ERDS2TJ223 | 1/4W 22K |
| R411, 412 | ERDS2TJ333 | 1/4W 33K |
| R413, 414 | ERDS2TJ273 | 1/4W 27K |
| R415, 416 | ERDS2TJ223 | 1/4W 22K |
| R417-419 | ERDS2TJ393 | 1/4W 39K |
| R420 | ERDS2TJ472 | 1/4W 4.7K |
| R421, 422 | ERDS2TJ223 | 1/4W 22K |
| R423-426 | ERDS2TJ103 | 1/4W 10K |
| R427, 428 | ERDS2TJ153 | 1/4W 15K |
| R429, 430 | ERDS2TJ472 | 1/4W 4.7K |
| R431, 432 | ERDS2TJ103 | 1/4W 10K |
| R433 | ERDS2TJ561 | 1/4W 560 |
| R434 | ERDS2EJ121 | 1/4W 120 |
| R435 | ERDS2TJ334 | 1/4W 330K |
| R436 | ERDS2TJ105T | 1/4W 1M |
| R437-440 | ERDS2TJ472 | 1/4W 4.7K |
| R441, 442 | ERDS2TJ103 | 1/4W 10K |
| R445, 446 | ERDS2TJ472 | 1/4W 4.7K |
| R447, 448 | ERDS2TJ123 | 1/4W 12K |
| R449, 450 | ERDS2TJ333 | 1/4W 33K |
| R453 | ERG1SJ121E | 1W 120 ⚠ |
| R455 | ERDS2TJ272T | 1/4W 2.7K |
| R457 | ERDS2TJ272T | 1/4W 2.7K |
| R460 | ERDS2TJ105T | 1/4W 1M |
| R461, 462 | ERDS2TJ472 | 1/4W 4.7K |
| R463, 464 | ERDS2TJ152 | 1/4W 1.5K |
| R465 | ERDS2TJ102 | 1/4W 1K |
| R466 | ERDS2TJ105T | 1/4W 1M |
| R467 | ERDS2TJ474 | 1/4W 470K |
| R468 | ERDS2TJ102 | 1/4W 1K |
| R469 | ERDS2TJ334 | 1/4W 330K |
| R470 | ERDS2TJ392T | 1/4W 3.9K |
| R471, 472 | ERDS2EJ121 | 1/4W 120 |
| R473 | ERDS2TJ105T | 1/4W 1M |
| R474 | ERDS2TJ104 | 1/4W 100K |
| R475 | ERDS2TJ222 | 1/4W 2.2K |
| R476 | ERDS2TJ473 | 1/4W 47K |
| R477 | ERDS2TJ223 | 1/4W 22K |
| R479, 480 | ERDS2TJ333 | 1/4W 33K |
| R481, 482 | ERDS2TJ822 | 1/4W 8.2K |
| R485, 486 | ERDS2TJ683 | 1/4W 68K |
| R487, 488 | ERDS2TJ472 | 1/4W 4.7K |
| R489, 490 | ERDS2TJ104 | 1/4W 100K |
| R491, 492 | ERDS2TJ182 | 1/4W 1.8K |
| R497, 498 | ERDS2TJ333 | 1/4W 33K |
| R501, 502 | ERDS2TJ104 | 1/4W 100K |
| R503, 504 | ERDS2TJ222 | 1/4W 2.2K |
| R505-508 | ERDS2TJ563 | 1/4W 56K |
| R509 | ERD25FJ470 | 1/4W 47 ⚠ |
| R511 | ERDS2TJ563 | 1/4W 56K |
| R512 | ERDS2TJ103 | 1/4W 10K |
| R513, 514 | ERDS2TJ102 | 1/4W 1K |
| R515, 516 | ERDS1FVJ100T | 1/2W 10 ⚠ |
| R517 | ERDS2TJ823T | 1/4W 82K |
| R518 | ERDS2TJ124T | 1/4W 120K |
| R519 | ERDS2TJ563 | 1/4W 56K |
| R523, 524 | ERDS2TJ122 | 1/4W 1.2K |
| R531-534 | ERDS2TJ181T | 1/4W 180 |
| R575 | ERDS2TJ564 | 1/4W 560K |
| R576 | ERDS2TJ103 | 1/4W 10K |
| R603 | ERDS2TJ473 | 1/4W 47K |
| R604 | ERDS2TJ102 | 1/4W 1K |
| R605 | ERDS2TJ222 | 1/4W 2.2K |
| R606 | ERDS2TJ470 | 1/4W 47 |
| R607 | ERDS2TJ224T | 1/4W 220K |
| R608 | ERDS2TJ331 | 1/4W 330 |
| R609 | ERDS2TJ103 | 1/4W 10K |
| R610 | ERDS2TJ104 | 1/4W 100K |
| R612 | ERDS2TJ224T | 1/4W 220K |
| R613, 614 | ERDS2TJ102 | 1/4W 1K |
| R615 | ERDS2TJ223 | 1/4W 22K |
| R616 | ERDS2TJ103 | 1/4W 10K |
| R618 | ERDS2TJ101 | 1/4W 100 |
| R620 | ERDS2TJ101 | 1/4W 100 |
| R621 | ERDS2TJ222 | 1/4W 2.2K |
| R622, 623 | ERDS2TJ104 | 1/4W 100K |
| R624 | ERDS2TJ103 | 1/4W 10K |
| R625 | ERDS2TJ102 | 1/4W 1K |
| R626 | ERDS2TJ472 | 1/4W 4.7K |
| R627-629 | ERDS2TJ101 | 1/4W 100 |
| R630 | ERDS2TJ393 | 1/4W 39K |
| R631 | ERDS2TJ102 | 1/4W 1K |
| R632 | ERDS2TJ822 | 1/4W 8.2K |
| R633 | ERDS2TJ472 | 1/4W 4.7K |
| R634 | ERDS2TJ682T | 1/4W 6.8K |
| R635 | ERDS2TJ103 | 1/4W 10K |
| R636 | ERDS2TJ223 | 1/4W 22K |
| R637 | ERDS2TJ683 | 1/4W 68K |
| R638, 639 | ERDS2TJ103 | 1/4W 10K |
| R640 | ERDS2TJ393 | 1/4W 39K |
| R641, 642 | ERDS2TJ103 | 1/4W 10K |
| R643 | ERDS2TJ330 | 1/4W 33 |
| R644 | ERDS2TJ181T | 1/4W 180 |
| R646 | ERDS2TJ221 | 1/4W 220 |
| R647 | ERDS2TJ391 | 1/4W 390 |
| R648 | ERDS2TJ331 | 1/4W 330 |
| R649 | ERDS2TJ390 | 1/4W 39 |
| R651, 652 | ERDS2TJ103 | 1/4W 10K |
| R653, 654 | ERDS2TJ333 | 1/4W 33K |
| R655 | ERDS2TJ332 | 1/4W 3.3K |
| R657, 658 | ERDS2TJ272T | 1/4W 2.7K |
| R660 | ERDS2TJ272T | 1/4W 2.7K |
| R661, 662 | ERDS2TJ102 | 1/4W 1K |
| R663 | ERDS2TJ122 | 1/4W 1.2K |
| R664 | ERDS2TJ182 | 1/4W 1.8K |
| R665 | ERDS2TJ222 | 1/4W 2.2K |
| R666 | ERDS2TJ272T | 1/4W 2.7K |
| R667 | ERDS2TJ472 | 1/4W 4.7K |
| R668 | ERDS2TJ682T | 1/4W 6.8K |
| R669 | ERDS2TJ103 | 1/4W 10K |
| R671, 672 | ERDS2TJ102 | 1/4W 1K |
| R673 | ERDS2TJ122 | 1/4W 1.2K |
| R674 | ERDS2TJ182 | 1/4W 1.8K |
| R675 | ERDS2TJ222 | 1/4W 2.2K |
| R676 | ERDS2TJ272T | 1/4W 2.7K |
| R677 | ERDS2TJ472 | 1/4W 4.7K |
| R678, 679 | ERDS2TJ103 | 1/4W 10K |
| R681, 682 | ERDS2TJ561 | 1/4W 560 |
| R683 | ERDS2TJ102 | 1/4W 1K |
| R684 | ERDS2TJ391 | 1/4W 390 |
| R685, 686 | ERDS2TJ102 | 1/4W 1K |
| R687 | ERDS2TJ473 | 1/4W 47K |
| R688, 689 | ERDS2TJ152 | 1/4W 1.5K |
| R690 | ERDS2TJ102 | 1/4W 1K |
| R699 | ERDS2TJ102 | 1/4W 1K |
| R701 | ERDS2TJ102 | 1/4W 1K |
| R701A | ERDS2TJ2R2T | 1/4W 2.2 |
| R702 | ERQ16NKW1R0E | 1/6W 1.0 ⚠ |
| R705, 706 | ERDS2TJ472 | 1/4W 4.7K |
| R707 | ERDS1FVJ2R2T | 1/2W 2.2 ⚠ |
| R708 | ERG1SJ331E | 1W 330 |
| R713 | ERDS2TJ153 | 1/4W 15K |
| R714 | ERD2FCVJ4R7T | 1/4W 4.7 ⚠ |
| R715 | ERDS2TJ152 | 1/4W 1.5K |
| R716 | ERDS2TJ560T | 1/4W 56 |
| R718 | ERDS2TJ152 | 1/4W 1.5K |
| R719 | ERDS2EJ121 | 1/4W 120 |
| R720 | ERD2FCVJ4R7T | 1/4W 4.7 ⚠ |
| R722 | ERDS2TJ681 | 1/4W 680 |
| R724 | ERDS2TJ221 | 1/4W 220 |
| R726 | ERDS2TJ332 | 1/4W 3.3K |
| R727 | ERDS1FVJ271T | 1/2W 270 ⚠ |
| R728, 729 | ERDS2TJ152 | 1/4W 1.5K |
| R730 | ERDS2TJ331 | 1/4W 330 |
| R733 | ERDS2TJ102 | 1/4W 1K |
| R734 | ERDS2TJ101 | 1/4W 100 |
| R737, 738 | ERDS2TJ101 | 1/4W 100 |
| R753 | ERDS2TJ103 | 1/4W 10K |
| R755 | ERDS2TJ561 | 1/4W 560 |
| R757, 758 | ERDS2TJ103 | 1/4W 10K |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R803 | ERDS2TJ102 | 1/4W 1K |
| R804 | ERDS2TJ103 | 1/4W 10K |
| R805 | ERDS2TJ222 | 1/4W 2.2K |
| R808, 809 | ERDS2TJ272T | 1/4W 2.7K |
| R810 | ERDS2TJ223 | 1/4W 22K |
| R811 | ERDS2TJ272T | 1/4W 2.7K |
| R812 | ERDS2TJ102 | 1/4W 1K |
| R813 | ERDS2TJ272T | 1/4W 2.7K |
| R815, 816 | ERDS2TJ103 | 1/4W 10K |
| R841, 842 | ERDS2TJ223 | 1/4W 22K |
| R843 | ERDS2TJ102 | 1/4W 1K |
| R844 | ERDS2TJ222 | 1/4W 2.2K |
| R851, 852 | ERDS2TJ822 | 1/4W 8.2K |
| R853, 854 | ERDS2TJ103 | 1/4W 10K |
| R855, 856 | ERDS2TJ682T | 1/4W 6.8K |
| R857, 858 | ERDS2TJ333 | 1/4W 33K |
| R861, 862 | ERDS2TJ821 | 1/4W 820 |
| R971 | ERDS2TJ221T | 1/4W 220 |
| R973 | ERDS2TJ393T | 1/4W 39K |
| R974 | ERDS2TJ393T | 1/4W 39K |
| | | |
| | | CAPACITORS |
| | | |
| C100 | ECBT1E103ZF | 25V 0.01U |
| C101 | ECBT1C103NS5 | 16V 0.01U |
| C103 | ECBT1C103NS5 | 16V 0.01U |
| C104, 105 | ECBT1H102KB5 | 50V 1000P |
| C106 | ECBT1C103NS5 | 16V 0.01U |
| C107 | ECBT1H473ZF5 | 50V 0.047U |
| C108 | ECBT1H100JC5 | 50V 10P |
| C109, 110 | ECBT1C103NS5 | 16V 0.01U |
| C111 | ECEA1EKA4R7B | 25V 4.7U |
| C112 | ECBT1C103NS5 | 16V 0.01U |
| C113 | ECBT1H102KB5 | 50V 1000P |
| C114 | ECEA1HKA3R3B | 50V 3.3U |
| C115 | ECEA1CKA100B | 16V 10U |
| C116 | ECBT1C822MS5 | 16V 8200P |
| C117 | ECQP2A221JZT | 100V 220P |
| C118, 119 | ECFR1E103KR | 25V 0.01U |
| C120, 121 | ECEA1HKA010B | 50V 1U |
| C122 | ECEA1HKA2R2B | 50V 2.2U |
| C123 | ECEA1HKA010B | 50V 1U |
| C124 | ECBT1H102KB5 | 50V 1000P |
| C125 | ECBT1H150JC5 | 50V 15P |
| C126 | ECBT1H473ZF5 | 50V 0.047U |
| C127 | ECEA1CKA220B | 16V 22U |
| C128 | ECBT1C103NS5 | 16V 0.01U |
| C129, 130 | ECEA0JKA101B | 6.3V 100U |
| C131 | ECBT1C103NS5 | 16V 0.01U |
| C132 | ECBT1H102KB5 | 50V 1000P |
| C133, 134 | ECBT1H270JU5 | 50V 27P |
| C135, 136 | ECBT1C822MS5 | 16V 8200P |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| C137, 138 | ECBT1H271KB5 | 50V 270P |
| C139, 140 | ECFR1E822KR | 25V 8200P |
| C141-144 | ECEA1HKA010B | 50V 1U |
| C145 | ECBT1H220JC5 | 50V 22P |
| C146 | ECBT1H331KB5 | 50V 330P |
| C147 | ECBT1H102KB5 | 50V 1000P |
| C148 | ECBT1C103NS5 | 16V 0.01U |
| C149 | ECBT1H104ZF5 | 50V 0.1U |
| C171 | ECBT1C103NS5 | 16V 0.01U |
| C172 | ECBT1H331KB5 | 50V 330P |
| C173 | ECEA1CKA220B | 16V 22U |
| C174 | ECEA1CKA101B | 16V 100U |
| C181 | ECBT1H471KB5 | 50V 470P |
| C201 | ECBT1E223ZF | 25V 0.022U |
| C201 | ECEA1CKA100B | 16V 10U |
| C202 | ECBT1H104ZF5 | 50V 0.1U |
| C203 | ECEA1HKA4R7B | 50V 4.7U |
| C211 | ECEA1CKA100B | 16V 10U |
| C212 | ECBT1H104ZF5 | 50V 0.1U |
| C213 | ECBT1C103NS5 | 16V 0.01U |
| C214, 215 | ECEA1EKA4R7B | 25V 4.7U |
| C231, 232 | ECBT1H470J5 | 50V 47P |
| C233 | ECBT1H104ZF5 | 50V 0.1U |
| C234 | ECBT1H102KB5 | 50V 1000P |
| C251 | ECEA1HKA2R2B | 50V 2.2U |
| C252 | ECBT1E103ZF | 25V 0.01U |
| C253-256 | ECBT1H101KB5 | 50V 100P |
| C257 | ECEA1EKA4R7B | 25V 4.7U |
| C258 | ECBT1H102KB5 | 50V 1000P |
| C259 | ECBT1E103ZF | 25V 0.01U |
| C260 | ECEA1HKA2R2B | 50V 2.2U |
| C261 | ECBT1E223ZF | 25V 0.022U |
| C262 | ECEA1CKA220B | 16V 22U |
| C263 | ECQV1H823JM3 | 50V 0.082U |
| C264 | ECQV1H104JM3 | 50V 0.1U |
| C265 | ECBT1C222KR5 | 16V 2200P |
| C266, 267 | ECQB1H223JF3 | 50V 0.022U |
| C268 | ECEA1HKA010B | 50V 1U |
| C269, 270 | ECEA1EKA4R7B | 25V 4.7U |
| C271 | ECEA1CKA100B | 16V 10U |
| C285 | ECBT1H101KB5 | 50V 100P |
| C286 | ECBT1E103ZF | 25V 0.01U |
| C287, 288 | ECBT1H101KB5 | 50V 100P |
| C290 | ECBT1H101KB5 | 50V 100P |
| C291 | ECBT1E103ZF | 25V 0.01U |
| C299 | ECBT1H470J5 | 50V 47P |
| C301 | ECEA1CKA101B | 16V 100U |
| C401-403 | ECBT1H101KB5 | 50V 100P |
| C404 | ECBT1H330J5 | 50V 33P |
| C405 | ECEA1CKA100B | 16V 10U |
| C406 | ECBT1E103ZF | 25V 0.01U |
| C407, 408 | ECEA1HKA2R2B | 50V 2.2U |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| C409 | ECBT1H330J5 | 50V 33P |
| C410 | ECBT1H100JC5 | 50V 10P |
| C411, 412 | ECBT1E103ZF | 25V 0.01U |
| C413 | ECQV1H823JM3 | 50V 0.082U |
| C414 | ECBT0J223NS5 | 6.3V 0.022U |
| C415, 416 | ECBT1H270J5 | 50V 27P |
| C417, 418 | ECEA1HKA2R2B | 50V 2.2U |
| C419, 420 | ECEA1CKA100B | 16V 10U |
| C421, 422 | ECBT1C332KR5 | 16V 3300P |
| C423, 424 | ECQV1H823JM3 | 50V 0.082U |
| C425, 426 | ECQV1H473JM3 | 50V 0.047U |
| C427-430 | ECEA1CKA100B | 16V 10U |
| C431, 432 | ECBT1E103ZF | 25V 0.01U |
| C435, 436 | ECEA1HKA010B | 50V 1U |
| C437, 438 | ECBT1H101KB5 | 50V 100P |
| C441, 442 | ECEA1HKAR22B | 50V 0.22U |
| C443, 444 | ECBT1H101KB5 | 50V 100P |
| C445, 446 | ECEA1HKA2R2B | 50V 2.2U |
| C447 | ECEA1EKA4R7B | 25V 4.7U |
| C448, 449 | ECEA1CKA100B | 16V 10U |
| C450 | ECEA1AKA101B | 10V 100U |
| C451, 452 | ECEA1HKAR68B | 50V 0.68U |
| C455 | ECEA1EKA4R7B | 25V 4.7U |
| C456 | ECEA1EKA100B | 25V 10U |
| C459, 460 | ECEA1CKA100B | 16V 10U |
| C461, 462 | ECBT1H101KB5 | 50V 100P |
| C463, 464 | ECBT1H270J5 | 50V 27P |
| C469, 470 | ECBT1E103ZF | 25V 0.01U |
| C471, 472 | ECEA1HKA010B | 50V 1U |
| C481 | ECBT1H330J5 | 50V 33P |
| C482, 483 | ECBT1H120JC5 | 50V 12P |
| C490 | ECEA1HKA010B | 50V 1U |
| C491, 492 | ECEA1HKAR68B | 50V 0.68U |
| C501, 502 | ECEA1HKA2R2B | 50V 2.2U |
| C503, 504 | ECEA1CKA100B | 16V 10U |
| C505, 506 | ECBT1H102KB5 | 50V 1000P |
| C507, 508 | ECBT1H150JC5 | 50V 15P |
| C509, 510 | ECBT1H331KB5 | 50V 330P |
| C512 | ECEA0JKA470B | 6.3V 47U |
| C513 | ECEA1CKA100B | 16V 10U |
| C515, 516 | ECBT1H104ZF5 | 50V 0.1U |
| C517 | ECEA0JKA101B | 6.3V 100U |
| C523, 524 | ECBT1C472KR5 | 16V 4700P |
| C531, 532 | ECBT1E223ZF | 25V 0.022U |
| C533, 534 | ECBT1E223ZF | 25V 0.022U |
| C535, 536 | ECBT1H102KB5 | 50V 1000P |
| C601, 602 | ECBT1H104ZF5 | 50V 0.1U |
| C604 | ECBT1C103NS5 | 16V 0.01U |
| C605 | ECEA1HKA2R2B | 50V 2.2U |
| C606 | ECEA0JU102 | 6.3V 1000U |
| C607 | ECEA1AKA330B | 10V 33U |
| C608 | ECEA1CKA100B | 16V 10U |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| C609, 610 | ECBT1H104ZF5 | 50V 0.1U |
| C611 | ECBT1H200JC5 | 50V 20P |
| C612 | ECBT1H220JC5 | 50V 22P |
| C613 | ECBT1C103NS5 | 16V 0.01U |
| C614 | ECEA1HKA010B | 50V 1U |
| C615 | ECEA1EKA100B | 25V 10U |
| C616 | ECEA1VKA4R7B | 35V 4.7U |
| C617 | ECBT1H102KB5 | 50V 1000P |
| C625 | ECBT1H821KB5 | 50V 820P |
| C626 | ECBT1H101KB5 | 50V 100P |
| C651, 652 | ECBT1H330J5 | 50V 33P |
| C653 | ECBT1H104ZF5 | 50V 0.1U |
| C661 | ECBT1H102KB5 | 50V 1000P |
| C662 | ECBT1C103NS5 | 16V 0.01U |
| C681 | ECBT1C103NS5 | 16V 0.01U |
| C686 | ECBT1H102KB5 | 50V 1000P |
| C691 | ECBT1C103NS5 | 16V 0.01U |
| C701-703 | ECA1VM472B | 35V 4700U ⚠ |
| C701 | ECEA1AKA330B | 10V 33U |
| C704 | ECKR1H103ZF5 | 50V 0.01U |
| C706 | ECQE1104KF3 | 100V 0.1U |
| C708 | ECA1HM470B | 50V 47U |
| C710, 711 | ECKR1H103ZF5 | 50V 0.01U |
| C713 | ECA1HM470B | 50V 47U ⚠ |
| C714 | ECKR1H103ZF5 | 50V 0.01U |
| C719 | ECKR1H103ZF5 | 50V 0.01U |
| C720, 721 | ECEA1CKA101B | 16V 100U |
| C722 | ECKR1H103ZF5 | 50V 0.01U |
| C723 | ECEA1EKA220B | 25V 22U |
| C724 | ECEA1HKA010B | 50V 1U |
| C726 | ECEA1EKA4R7B | 25V 4.7U |
| C727 | ECEA0JKA101B | 6.3V 100U |
| C729 | ECEA1CKA101B | 16V 100U |
| C730 | ECBT1E103ZF | 25V 0.01U |
| C731 | ECEA1CKA100B | 16V 10U |
| C732 | ECBT1E103ZF | 25V 0.01U |
| C733 | ECEA1AKA101B | 10V 100U |
| C736 | ECBT1E223ZF | 25V 0.022U |
| C737 | ECEA1CKA101B | 16V 100U |
| C739, 740 | ECBT1H104ZF5 | 50V 0.1U |
| C803 | ECBT1H104ZF5 | 50V 0.1U |
| C804, 805 | ECBT1H120JC5 | 50V 12P |
| C812 | RCE1AM471DV | 10V 470P |
| C841, 842 | ECEA1HKA010B | 50V 1U |
| C843 | ECEA1EKA4R7B | 25V 4.7U |
| C845, 846 | ECEA1EKA4R7B | 25V 4.7U |
| C851, 852 | ECBT1H271KB5 | 50V 270P |
| | | |
| | | <SERVO P.C.B.> |
| | | RESISTORS |
| | | |
| R101, 102 | ERJ6GEYJ223V | 1/10W 22K |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R103 | ERJ6GEYJ124V | 1/10W 120K |
| R104 | ERJ6GEYJ104V | 1/10W 100K |
| R105 | ERJ6GEYJ221V | 1/10W 220 |
| R106 | ERJ6GEYJ330V | 1/10W 33 |
| R107 | ERJ6GEYJ125V | 1/10W 1.2M |
| R108 | ERJ6GEYJ124V | 1/10W 120K |
| R109 | ERJ6GEYJ333V | 1/10W 33K |
| R110 | ERJ6GEYJ102V | 1/10W 1K |
| R111 | ERJ6GEYJ912V | 1/10W 9.1K |
| R112 | ERJ6GEYJ102V | 1/10W 1K |
| R113 | ERJ6GEYJ912V | 1/10W 9.1K |
| R114 | ERJ6GEYJ153V | 1/10W 15K |
| R115 | ERJ6GEYJ333V | 1/10W 33K |
| R116, 117 | ERJ6GEYJ223V | 1/10W 22K |
| R118 | ERJ6GEYJ683V | 1/10W 68K |
| R204 | ERJ6GEYJ100 | 1/10W 10 |
| R206 | ERJ6GEYJ223V | 1/10W 22K |
| R301 | ERJ6GEYJ103V | 1/10W 10K |
| R302, 303 | ERJ6GEYJ102V | 1/10W 1K |
| R308 | ERJ6GEYJ473V | 1/10W 47K |
| R311 | ERJ6GEYJ104V | 1/10W 100K |
| R312 | ERJ6GEYJ103V | 1/10W 10K |
| R401 | ERJ6GEYJ392V | 1/10W 3.9K |
| R402 | ERJ6GEYJ123V | 1/10W 12K |
| R403 | ERJ6GEYJ154V | 1/10W 150K |
| R404 | ERJ6GEYJ822V | 1/10W 8.2K |
| R405 | ERJ6GEYJ272V | 1/10W 2.7K |
| R406 | ERJ6GEYJ393V | 1/10W 39K |
| R407 | ERJ6GEYJ272V | 1/10W 2.7K |
| R408 | ERJ6GEYJ683V | 1/10W 68K |
| R409 | ERJ6GEYJ224V | 1/10W 220K |
| R501 | ERJ6GEYJ681V | 1/10W 680 |
| R502 | ERJ6GEYJ103V | 1/10W 10K |
| R503 | ERJ6GEYJ823 | 1/10W 82K |
| R504 | ERJ6GEYJ683V | 1/10W 68K |
| R505 | ERJ6GEYJ471V | 1/10W 470 |
| R506 | ERJ6GEYJ100 | 1/10W 10 |
| R507 | ERJ6GEYJ822V | 1/10W 8.2K |
| R601, 602 | ERJ6GEYJ221V | 1/10W 220 |
| R603 | ERJ6GEYJ682V | 1/10W 6.8K |
| R604 | ERJ6GEYJ104V | 1/10W 100K |
| R605 | ERJ6GEYJ392V | 1/10W 3.9K |
| R606 | ERJ6GEYJ222V | 1/10W 2.2K |
| | | |
| | | CHIP JUMPERS |
| | | |
| RJ1-7 | ERJ6GEY0R00V | CHIP JUMPER |
| RJ11, 12 | ERJ8GEY0R00V | CHIP JUMPER |
| | | |
| | | CAPACITORS |
| | | |
| C1 | ECEA0JKA331I | 6.3V 330U |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| C2 | ECUV1C104ZFN | 16V 0.1U |
| C101 | ECUV1C333KBN | 16V 0.033U |
| C102, 103 | ECUV1C104KBN | 16V 0.1U |
| C104 | ECUV1E183KBN | 25V 0.018U |
| C105 | ECUV1C104ZFN | 16V 0.1U |
| C106, 107 | ECUV1H331KBN | 50V 330P |
| C108, 109 | ECUV1C333KBN | 16V 0.033U |
| C110 | ECUV1E103KBN | 25V 0.01U |
| C111 | ECUV1C473KBN | 16V 0.047U |
| C112 | ECUV1E223KBN | 25V 0.022U |
| C113 | ECUV1C333KBN | 16V 0.033U |
| C114 | ECUV1H222KBN | 50V 2200P |
| C115 | ECUV1H152KBN | 50V 1500P |
| C116 | ECUV1E104ZFM | 25V 0.1U |
| C202 | ECEA1AKA220I | 10V 22U |
| C311 | ECUV1C104ZFN | 16V 0.1U |
| C312 | ECUV1E103KBN | 25V 0.01U |
| C401 | ECEA0JKA331I | 6.3V 330U |
| C402, 403 | ECUV1C104ZFN | 16V 0.1U |
| C501 | ECUV1H561KBN | 50V 560P |
| C502 | ECUV1C104KBN | 16V 0.1U |
| C503 | ECUV1E223KBN | 25V 0.022U |
| C504 | ECUV1C474KBM | 16V 0.47U |
| C505 | ECEA0JKA101I | 6.3V 100U |
| C506, 507 | ECUV1H390KCN | 50V 39P |
| C508 | ECUV1C104ZFN | 16V 0.1U |
| C509 | ECUV1H390KCM | 50V 39P |
| C601 | ECUV1C104ZFN | 16V 0.1U |
| C602 | ECEA0JKA470I | 6.3V 47U |
| C603, 604 | ECUV1H332KBN | 50V 3300P |
| C605 | ECEA1AKA220I | 10V 22U |
| C606 | ECUV1C104ZFN | 16V 0.1U |
| C607, 608 | ECEA1CPK100I | 16V 10U |
| C609 | ECUV1C104ZFN | 16V 0.1U |
| | | |
| | | <MECHANISM CONT. P.C.B.> |
| | | RESISTORS |
| | | |
| R601, 602 | ERJ6GEYJ820V | 1/10W 82 |
| R603, 604 | ERJ6GEYJ472V | 1/10W 4.7K |
| R605, 606 | ERJ6GEYJ223V | 1/10W 22K |
| R607, 608 | ERJ6GEYJ562V | 1/10W 5.6K |
| R609, 610 | ERJ6GEYJ103V | 1/10W 10K |
| R613, 614 | ERJ6GEYJ682V | 1/10W 6.8K |
| R615, 616 | ERJ6GEYJ104V | 1/10W 100K |
| R621 | ERJ6GEYJ334V | 1/10W 330K |
| R622 | ERJ6GEYJ273V | 1/10W 27K |
| R623 | ERDS2TJ103 | 1/4W 10K |
| R624 | ERJ6GEYJ123V | 1/10W 12K |
| R625 | ERJ6GEYJ105 | 1/10W 1M |
| R626 | ERJ6GEYJ102V | 1/10W 1K |
| R627 | ERJ6GEYJ105 | 1/10W 1M |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| R631 | ERJ6GEYJ103V | 1/10W 10K |
| R632 | ERJ6GEYJ273V | 1/10W 27K |
| R633 | ERJ8GEYJ183V | 1/8W 18K |
| R634 | ERDS2TJ472 | 1/4W 4.7K |
| R635, 636 | ERJ6GEYJ103V | 1/10W 10K |
| R639, 640 | ERJ6GEYJ272V | 1/10W 2.7K |
| R641, 642 | ERJ6GEYJ273V | 1/10W 27K |
| R643 | ERDS2TJ472 | 1/4W 4.7K |
| R644, 645 | ERJ6GEYJ152V | 1/10W 1.5K |
| R646 | ERJ6GEYJ334V | 1/10W 330K |
| R648 | ERJ6GEYJ103V | 1/10W 10K |
| R649 | ERJ6GEYJ182V | 1/10W 1.8K |
| R650 | ERJ6GEYJ682V | 1/10W 6.8K |
| R651 | ERJ6GEYJ223V | 1/10W 22K |
| R652 | ERJ6GEYJ153V | 1/10W 15K |
| R653 | ERJ6GEYJ182V | 1/10W 1.8K |
| R654 | ERJ6GEYJ223V | 1/10W 22K |
| R655 | ERDS1FVJ2R2T | 1/2W 2.2 ⚠ |
| R656-658 | ERJ6GEYJ472V | 1/10W 4.7K |
| R659, 660 | ERJ6GEYJ223V | 1/10W 22K |
| R661 | ERJ6GEYJ105 | 1/10W 1M |
| R662 | ERJ6GEYJ223V | 1/10W 22K |
| R663 | ERJ6GEYJ104V | 1/10W 100K |
| R664 | ERJ6GEYJ153V | 1/10W 15K |
| R665 | ERJ6GEYJ393V | 1/10W 39K |
| R666, 667 | ERJ6GEYJ273V | 1/10W 27K |
| R671 | ERDS2TJ103 | 1/4W 10K |
| R673 | ERJ6GEYJ222V | 1/10W 2.2K |
| R674 | ERJ6GEYJ472V | 1/10W 4.7K |
| R675 | ERJ8GEYJ104V | 1/8W 100K |
| R676 | ERDS2TJ104 | 1/4W 100K |
| R677 | ERJ6GEYJ104V | 1/10W 100K |
| R678 | ERJ8GEYJ472V | 1/8W 4.7K |
| R679 | ERDS2TJ470 | 1/4W 47 |
| R680 | ERJ6GEYK1R8V | 1/10W 1.8 |
| R681 | ERJ8GEYK1R8V | 1/8W 1.8 |
| R682 | ERJ6GEYJ222V | 1/10W 2.2K |
| R683 | ERJ6GEYJ103V | 1/10W 10K |
| R684 | ERJ6GEYJ102V | 1/10W 1K |
| R685, 686 | ERJ6GEYJ471V | 1/10W 470 |
| R687-689 | ERJ6GEYJ222V | 1/10W 2.2K |
| | | |
| | | CHIP JUMPERS |
| | | |
| RJ699 | ERJ8GEY0R00V | CHIP JUMPER |
| | | |
| | | CAPACITORS |
| | | |
| C601, 602 | ECUV1H331KBN | 50V 330P |
| C603, 604 | ECEA0JKA470I | 6.3V 47U |
| C605, 606 | ECUV1E183KBN | 25V 0.018U |
| C607, 608 | ECST1AY475RR | 10V 4.7U |

| Ref. No. | Part No. | Values & Remarks |
|---|---|---|
| C609, 610 | ECUV1H681KBN | 50V 680P |
| C611, 612 | ECST0JY475RR | 6.3V 4.7U |
| C615, 616 | ECUV1H331KBN | 50V 330P |
| C617, 618 | ECEA1HKS2R2I | 50V 2.2U |
| C619, 620 | ECEA1HKS010 | 50V 1U |
| C621, 622 | ECST1CY105RR | 16V 1U |
| C625 | ECEA1EKA4R7I | 25V 4.7U |
| C626 | ECEA1EKS4R7I | 25V 4.7U |
| C627, 628 | ECEA1HKA010I | 50V 1U |
| C629, 630 | ECUV1H102KBN | 50V 1000P |
| C633 | ECUV1E223MBN | 25V 0.022U |
| C634, 635 | ECEA1AKA101I | 10V 100U |
| C636 | ECUV1H472KBN | 50V 4700P |
| C637 | ECEA0JKS470 | 6.3V 47U |
| C638 | ECEA0JKA470I | 6.3V 47U |
| C640 | ECEA1CKA100I | 16V 10U |
| C641, 642 | ECUV1C104KBN | 16V 0.1U |
| C643 | ECUV1E104MBN | 25V 0.1U |
| C644 | ECEA2AN2R2SI | 100V 2.2U |
| C647 | ECQP2A821JZT | 100V 820P |
| C648 | ECQP2E472JZT | 250V 4700P |
| C650 | ECEA1AKA101I | 10V 100U |
| C651 | ECUV1E103MBN | 25V 0.01U |
| C652 | ECEA1HKA0R1I | 50V 0.1U |
| C653 | ECQB1H393JF3 | 50V 0.039U |
| C654 | ECUV1H102KBN | 50V 1000P |
| C655 | ECUV1H332KBN | 50V 3300P |
| C656 | ECUV1H102KBN | 50V 1000P |
| C657, 658 | ECUV1E103MBN | 25V 0.01U |
| C659 | ECEA0JKA470I | 6.3V 47U |
| C660 | ECUV1C104KBN | 16V 0.1U |
| C661 | ECEA1CKA101 | 16V 100U |
| C662 | ECUV1E103MBN | 25V 0.01U |
| C663 | ECUV1E104ZFN | 25V 0.1U |
| C664 | ECEA1AKA101I | 10V 100U |
| C665 | ECUV1E104ZFN | 25V 0.1U |
| C666-668 | ECUV1H102KBN | 50V 1000P |
| C669 | ECEA0JKA470I | 6.3V 47U |
| C670-672 | ECUV1H471KBN | 50V 470P |

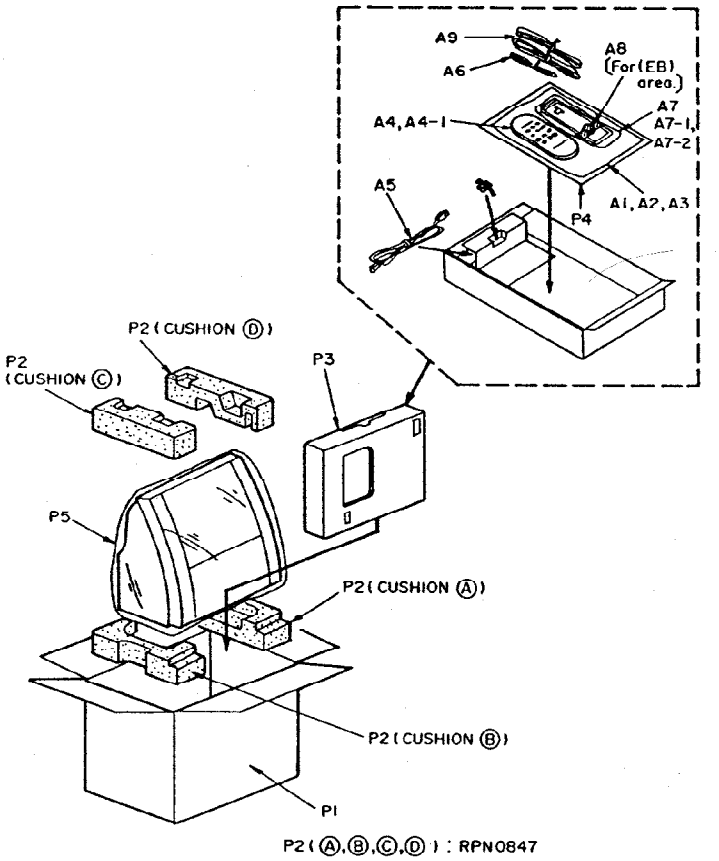
# ■ REPLACEMENT PARTS LIST

**Notes:** *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
*Remote Control Ass'y: Supply period for three years from termination of production.
*The "(SF)" mark denotes the standard part.

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | | |
| | | PACKING MATERIAL | |
| | | | |
| P1 | RPG2203 | PACKING CASE | (EB) |
| P1 | RPG2202 | PACKING CASE | (EG, EI) |
| P2 | RPN0847 | CUSHION | |
| P3 | RPQF0141 | ACCESSORIES BOX | |
| P4 | XZB25X34C03Y | PROTECTION BAG(F.B.) | |
| P5 | XZB70X85A01Z | PROTECTION BAG(UNIT) | |
| | | | |
| | | ACCESSORIES | |
| | | | |
| A1 | RQT2653-B | INSTRUCTION MANUAL | (EB) |
| A1 | RFKSALS10EG | INSTRUCTION MANUAL ASS'Y | (EG) |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| A1 | RFKSALS10EI | INSTRUCTION MANUAL ASS'Y | (EI) |
| A2 | RQA0013 | WARRANTY CARD | |
| A3 | RQCB0169 | SERVICENTER LIST | |
| A4 | EUR642521 | REMOTE CONTROL TRANSMITTER | |
| A4-1 | UR64FT1549B | SLIDE COVER(BATTERY COVER) | FOR R/C TRANSMITTER |
| A5 | RJA0019-2K | AC POWER SUPPLY CORD | (EG, EI) ⚠ (SF) |
| A5 | VJA0733 | AC POWER SUPPLY CORD | (EB) ⚠ (SF) |
| A6 | RSA0007 | FM INDOOR ANTENNA | |
| A7 | RSA0010 | AM LOOP ANTENNA SET | |
| A7-1 | RMN0244 | AM ANTENNA HOLDER | |
| A7-2 | XTN3+10AFZ | SCREW | |
| A8 | SJP9009 | ATTACHMENT PLUG | (EB) ⚠ |
| A9 | REE0499 | SPEAKER CORD | |
| | | | |

# ■ PACKAGING




P2 (Ⓐ, Ⓑ, Ⓒ, Ⓓ) : RPN0847

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